

Ethics

Jennifer Schaff, PE
Technical Resource Engineer
County Materials Corporation
Jennifer.Schaff@countymaterials.com

History

Canons

Current
Events

Application

History

Canons

Current
Events

Application

History



Definition of ethics

1 ethics: the discipline dealing with what is good and bad and with moral duty and obligation

2a: a set of moral principles : a theory or system of moral values

b: the principles of conduct governing an individual or a group

c: a guiding philosophy

d: a consciousness of moral importance



2589-2566 BC



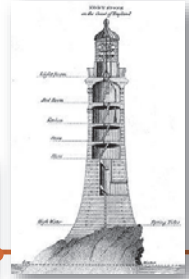
142 BC*



81-96 AD



1200 AD**



1325 "Engineer"

1771 AD

History of Engineering

- The Great Pyramids
- Roman Arch Bridges
- Roman Aqueducts
- French Military Engineers
- John Smeaton – Civilian Engineer



1928



ASCE latest update: 2020

TODAY

NSPE List
 Applauds
 owers in BART
 Fraudeasance

1928
 San Gabriel Dam
 Fraud



Gallup Public Opinion - 2012

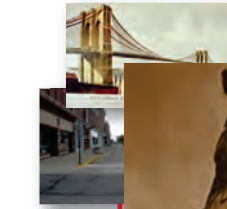
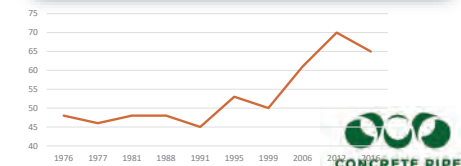
Please tell me how you would rate the honesty and ethical standards of people in these different fields -- very high, high, average, low, or very low? How about -- [RANDOM ORDER]?
 Sorted by % very high/high

| | % Very high/High | % Average | % Very low/Low |
|---------------------|------------------|-----------|----------------|
| Nurses | 85 | 12 | 3 |
| Pharmacists | 75 | 21 | 3 |
| Medical doctors | 70 | 26 | 4 |
| Engineers | 70 | 25 | 3 |
| Dentists | 62 | 33 | 4 |
| Police officers | 58 | 32 | 10 |
| College teachers | 53 | 34 | 10 |
| Clergy | 52 | 33 | 9 |
| Psychiatrists | 41 | 43 | 11 |
| Chiropractors | 38 | 46 | 11 |
| Bankers | 28 | 48 | 24 |
| Journalists | 24 | 45 | 30 |
| Business executives | 21 | 50 | 27 |
| State governors | 20 | 48 | 31 |
| Lawyers | 19 | 42 | 38 |

| | % Very high/High | % Average | % Very low/Low |
|---------------------------|------------------|-----------|----------------|
| Insurance salespeople | 15 | 49 | 36 |
| Senators | 14 | 39 | 45 |
| HMO Managers | 12 | 52 | 27 |
| Stockbrokers | 11 | 48 | 39 |
| Advertising practitioners | 11 | 50 | 36 |
| Members of Congress | 10 | 34 | 54 |
| Car salespeople | 8 | 43 | 49 |

Gallup, Nov. 26-29, 2012

GALLUP



1880

1852 Founded



Ethics by Royalty



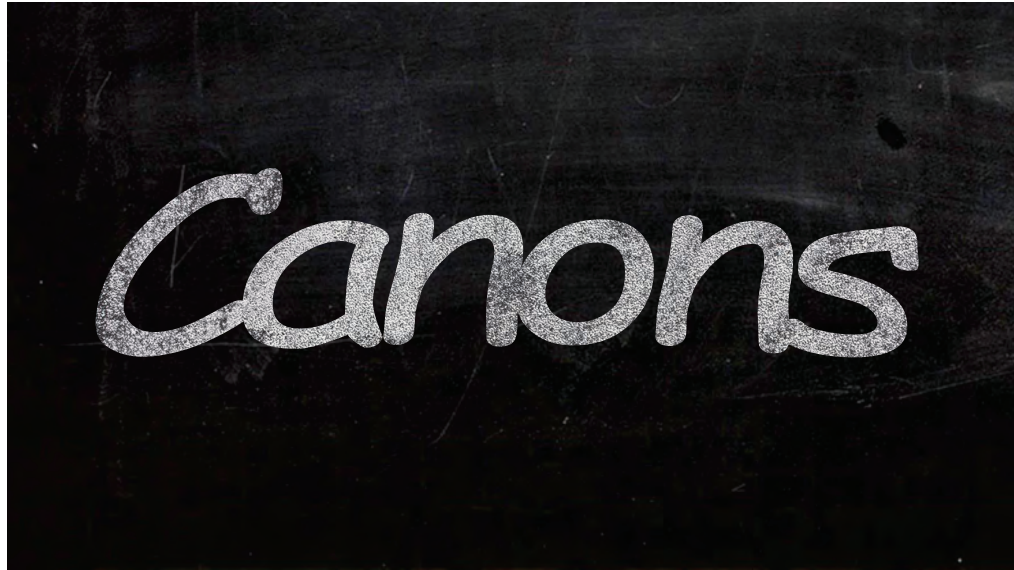
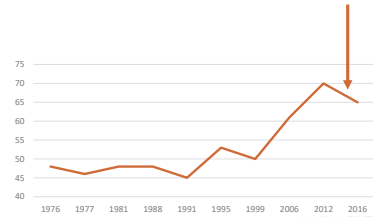
Expansion

Waiveasance

Gallup Public Opinion - 2012



Superbowl Commercial – Jan 2014



The Challenge

If one judges action "A" to be the best course of action, why would one do anything other than "A?"

-Socrates

Akrasia (Greek ἀκρασία, "lacking command"), occasionally described as a lack of self-control or a weakness of will.



Socrates
470 BCE – 399 BCE





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

II. Rules of Practice

- Engineers shall hold paramount the safety, health, and welfare of the public.
 - 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.
 - Engineers shall approve only those engineering documents that are in conformity with applicable standards.
 - 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.
 - 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.
 - Engineers shall not aid or abet the unlawful practice of engineering by a person or firm.
 - Engineers having knowledge of any alleged violation of this Code shall report thereon to appropriate governmental agencies, when relevant, and to public authorities, and cooperate with the proper authorities in furnishing such information or assistance as may be required.
- Engineers shall perform services only in the areas of their competence.
 - Engineers shall undertake assignments only when qualified by education or experience in the specific technical fields involved.
 - Engineers shall not affix their signatures to any plans or documents bearing with subject matter in which they lack competence, nor to any plan or document not prepared under their direction and control.
- Engineers shall issue public statements only in an objective and truthful manner.
 - 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.
 - Engineers may express publicly technical opinions that are founded upon knowledge of the facts and competence in the subject matter.
 - Engineers shall issue no statements, opinions, or arguments on technical matters that are inspired or paid for by interested parties, unless they have obtained their comments by strictly identifying the interested parties on whose behalf they are speaking, and by revealing the existence of any interest the engineer may have in the matters.
- Engineers shall act for each employer or client as faithful agents or trustees.
 - Engineers shall disclose all actual or potential conflicts of interest that could influence or appear to influence their judgment or the quality of their services.
 - Engineers shall avoid compensation, financial or otherwise, from more than one party for services of the same project, or for services pertaining to the same project, unless the circumstances are fully disclosed and agreed to by all concerned parties.
 - Engineers shall not solicit or accept financial or other valuable consideration, directly or indirectly, from subcontractors or other parties, in connection with the work for which they are responsible.
 - Engineers in public service as members, advisors, or officers of governmental or quasi-governmental bodies or departments shall not participate in decisions with respect to contracts to be awarded by their respective organizations in private or public engineering practice.
 - Engineers shall not solicit or accept a commission, governmental body or other organization for which a principal or officer of their organization serves as a member.
- Engineers shall avoid deceptive acts.
 - 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 their assignments. Disclosures for other organizations' incidents

1600 NORTH STREET, ALEXANDRIA, VIRGINIA 22304-2704 • 800-541-NSPE (6773) • LOCAL OFFICE: 703-681-9800 • WWW.NSPE.ORG • PUBLISHED ONLINE AS REVISED JULY 2017 • PUBLICATION #E2017 • JOURNAL: JOURNAL OF PROFESSIONAL ENGINEERING, NOVEMBER/DECEMBER



Preamble

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- Engineers shall approve only those engineering documents that are in conformity with applicable standards.
- 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.
- 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.
- Engineers shall not aid or abet the unlawful practice of engineering by a person or firm.
- 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.





II. Rules of Practice

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.

Welfare **Protect**
 Area of **the**
 Competence **Public** **CANONS**
 impartiality honesty fairness equity
 Health Safety



II. Rules of Practice

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.

Welfare **Protect** **Truthful**
 Area of **the**
 Competence **Public** **CANONS**
 impartiality honesty fairness equity
 Health Safety
 Objective



II. Rules of Practice

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.

faithful
 agent
 Com
 Objective **Public** **CANONS**
 impartiality honesty fairness equity
 Health Safety



II. Rules of Practice

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.

faithful
 agent
 Competence **Public** **CANONS**
 impartiality honesty fairness equity
 Health Safety
 Objective
 deception



III. Professional Obligations

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

- Engineers shall acknowledge their errors and shall not distort or alter the facts.
- Engineers shall advise their clients or employers when they believe a project will not be successful.
- 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.
- Engineers shall not attempt to attract an engineer from another employer by false or misleading pretenses.
- Engineers shall not promote their own interest at the expense of the dignity and integrity of the profession.
- Engineers shall treat all persons with dignity, respect, fairness, and without discrimination.

2. Engineers shall at all times strive to serve the public interest.

- 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.
- 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.
- Engineers are encouraged to extend public knowledge and appreciation of engineering and its achievements.
- Engineers are encouraged to adhere to the principles of sustainable development¹ in order to protect the environment for future generations.
- 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 seminar.

agent
 faithful
 Highest Standards
 Welfare
 Area of
 Competence
 Objective
 SERVE
 the
 Public
 Safety
 honesty
 impartiality



Engineers' Creed

As a Professional Engineer, I dedicate my professional knowledge and skill to the advancement and betterment of human welfare.

I pledge:

To give the utmost of performance;

To participate in none but honest enterprise;

To live and work according to the laws of man and the highest standards of professional conduct;

To place service before profit, the honor and standing of the profession before personal advantage, and the public welfare above all other considerations.

In humility and with need for Divine Guidance, I make this pledge.
 (Adopted June 1954)



Approved by the ASCE Board of Direction on October 26, 2020

CODE OF ETHICS THE AMERICAN SOCIETY OF CIVIL ENGINEERS

PREAMBLE

Members of The American Society of Civil Engineers conduct themselves with integrity and professionalism, and above all else protect and advance the health, safety, and welfare of the public through the practice of Civil Engineering.

Engineers govern their professional careers on the following fundamental principles:

- create safe, resilient, and sustainable infrastructure;
- treat all persons with respect, dignity, and fairness in a manner that fosters equitable participation without regard to personal identity;
- consider the current and anticipated needs of society; and
- utilize their knowledge and skills to enhance the quality of life for humanity.

All members of The American Society of Civil Engineers, regardless of their membership grade or job description, commit to all of the following ethical responsibilities. In the case of a conflict between ethical responsibilities, the five stakeholders are listed in the order of priority. There is no priority of responsibilities within a given stakeholder group with the exception that 1a. takes precedence over all other responsibilities.¹



Approved by the ASCE Board of Directors on October 26, 2019

CODE OF ETHICS
THE AMERICAN SOCIETY OF CIVIL ENGINEERS

PREAMBLE
Members of The American Society of Civil Engineers conduct themselves with integrity and professionalism, and strive to do what is right and honest for the health, safety, and welfare of the public through the practice of Civil Engineering.

Engineers govern their professional careers on the following fundamental principles:

- create safe, sound, and sustainable infrastructure;
- meet all projects with respect, dignity, and fairness to a maximum that honors equitable participation without regard to personal interests;
- maintain the highest and most rigorous levels of safety; and
- utilize their knowledge and skills to enhance the quality of life for humans.

All members of The American Society of Civil Engineers, regardless of their membership grade or job description, commit to all of the following ethical imperatives. In the case of a conflict between ethical imperatives, the ethical imperative set forth in the order of priority. There is no priority or responsibility within a given multi-tiered group with the exception that 11, when precluded, rise to other responsibilities.

CODE OF ETHICS

1. SOCIETY

- Engineers:**
1. first and foremost protect the health, safety, and welfare of the public;
 2. enhance the quality of life for humans;
 3. ensure professional competence, honesty, and integrity, and only when frustrated on adequate knowledge and skillful discretion;
 4. have zero tolerance for bribery, fraud, and corruption in all forms, and report violations to the proper authorities;
 5. endeavor to be of service to civic affairs;
 6. meet all projects with respect, dignity, and fairness, and report all forms of discrimination and harassment;
 7. acknowledge the diverse historical, social, and cultural needs of the community, and incorporate these considerations in their work;
 8. consider the applicable, limitations, and capabilities of current and emerging technologies when part of their work; and
 9. report misconduct to the appropriate authorities when necessary to protect the health, safety, and welfare of the public.

2. NATURAL AND BUILT ENVIRONMENT

- Engineers:**
1. adhere to the principles of sustainable development;
 2. consider and balance societal, environmental, and economic impacts, along with opportunities for improvement, in their work;
 3. mitigate adverse societal, environmental, and economic effects; and
 4. use resources wisely while minimizing resource depletion.

3. PROFESSION

- Engineers:**
- a. uphold the honor, integrity, and dignity of the profession;
 - b. practice engineering in compliance with all legal requirements as the jurisdiction of practice;
 - c. represent their professional qualifications and experience truthfully;
 - d. report practices of unfair competition;
 - e. promote continuing education and knowledge sharing equitably with current and future engineers;
 - f. educate the public on the role of civil engineering in society; and
 - g. maintain professional development to enhance their technical and non-technical competencies.

4. CLIENTS AND EMPLOYERS

- Engineers:**
- a. act as faithful agents of their clients and employers with integrity and professionalism;
 - b. take care to create and improve our risk, financial, or personal records of activities;
 - c. communicate in a timely manner to clients and employers any risks and liabilities related to their work;
 - d. present clearly and promptly the consequences to clients and employers of their engineering judgment in essential values: health, safety, and welfare of the public may be endangered;
 - e. bring clients' and employers' identified proprietary information confidentially;
 - f. perform services only in areas of their competence; and
 - g. accept, sign, or seal only work products that have been prepared or reviewed by them or under their responsible charge.

5. PEERS

- Engineers:**
- a. only take credit for professional work they have personally completed;
 - b. provide references for the work of others;
 - c. issue credits and orders on the workplace;
 - d. promote and exhibit accurate, objective, and ethical behavior in all engagements with colleagues;
 - e. seek literacy and literacy as collaborative work efforts;
 - f. encourage and enable the education and development of other engineers and proprietary resources of the profession;
 - g. represent equitably and respectfully;
 - h. conduct only as professional manner on the work, professional opinions, and personal character of other engineers; and
 - i. report violations of the Code of Ethics to the American Society of Civil Engineers.

The Code and its articles is intended to be read in its entirety.



CODE OF ETHICS

1. SOCIETY
2. NATURAL AND BUILT ENVIRONMENT
3. PROFESSION
4. CLIENTS AND EMPLOYERS
5. PEERS

2. NATURAL AND BUILT ENVIRONMENT

Engineers:

- a. adhere to the principles of sustainable development;
- b. consider and balance societal, environmental, and economic impacts, along with opportunities for improvement, in their work;
- c. mitigate adverse societal, environmental, and economic effects; and
- d. use resources wisely while minimizing resource depletion.



The Environment

CANON 1: Engineers shall hold paramount the **safety, health, and welfare of the public** and shall strive to comply with the principles of **sustainable development** in the performance of their professional duties.

ASCE

Professional Obligations: 2(d) Engineers are encouraged to adhere to the principles of **sustainable development** in order to **protect the environment** for future generations.

NSPE



Institute for Sustainable Infrastructure

The Institute for Sustainable Infrastructure (ISI) is the hub of a unique community of organizations and individuals involved in the planning, design, construction, and maintenance of infrastructure. Based in Washington, DC, the organization was created for a single purpose: to develop and maintain a sustainability rating system for all civil infrastructure.

sustainableinfrastructure.org



Resilience: The ability to **PREPARE, PLAN FOR, ABSORB, RECOVER FROM,** or more **SUCCESSFULLY ADAPT** to adverse events.

Future Proof
Climate change

Resilience: The ability to **PREPARE, PLAN FOR, ABSORB, RECOVER FROM,** or more **SUCCESSFULLY ADAPT** to adverse events.

AASHTO – American Association of State Highway Transportation Officials



“Every \$1 invested in disaster mitigation by three federal agencies saves society \$6.”

- Natural Hazard Mitigation Saves: 2017 Interim Report

“40 to 60 percent of small businesses don’t reopen after a disaster, and 90 percent fail within a year unless they can resume operations within five days.”

- Pew Charitable Trust, May 15, 2019

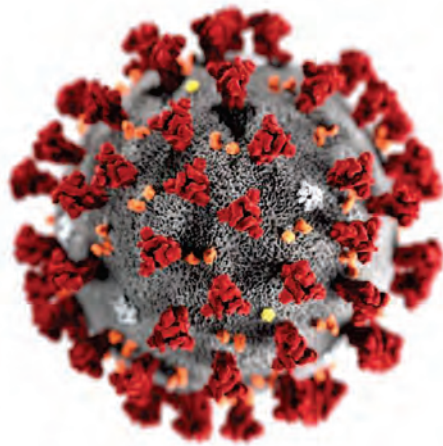


Continuing Education

Professional Obligations: 2(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.



COVID-19



Application

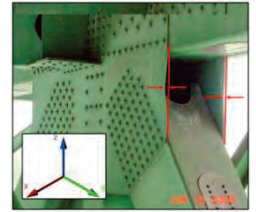
Standard of Care

professionals of the same discipline

practicing in the same locale

similar level of skill and competence

faced with similar facts and circumstances



I-35 Bridge Collapse

- August 1st 2007 killing 13 people injuring 145
- Jacobs (who purchased the company which had designed the bridge in 1999) paid \$8.9M in settlement
- URS – who performed fatigue analysis paid \$52.4M



Application

- Integrity
 - Adherence to moral principles, wholeness, and soundness of moral character.
- Honesty
 - Sincerity, fairness, and freedom from deceit or fraud
- Reliability
 - Trustworthiness, predictability, and dependability.

Application



A hand is shown in the process of writing the word "Ethics" in white chalk on a blackboard. The word is written in a cursive, slightly slanted font. The hand is holding a piece of white chalk, and a curved line is being drawn underneath the word.

Jennifer Schaff, PE
Technical Resource Engineer
County Materials Corporation
Jennifer.Schaff@countymaterials.com