ETHICS

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<u>My Ethical Acknowledgement</u>:
I made use of presentations by

Prof. Rick Vaz
Worcester Polytechnic Institute
&
William Loendorf, P.E.

Their presentations are on the Internet.

WHEN SHOULD WE THINK ABOUT ETHICS?

Values, Morals, Ethics & Law

Values – Core values are the fundamental beliefs of a person or organization representing their highest priorities.

Morals – Personal judgements, standards and rules of good conduct in society. A guide for permissible behavior with the purpose to create boundaries that people shouldn't cross to avoid harming others. It creates order, stability and trust among people within a society.

Ethics – The establishment of rules and standards that govern the moral behavior of individuals and organizations.

Law – Formal rules and regulations for personal, group or organizational behavior; civil and/or criminal penalties apply.

CORE VALUES

Commonly listed personal core values:

Dependability	Motivation
Reliability	Charity
Loyalty	Positivity
Commitment	Optimism
Open-mindedness	Passion
Consistency	Respect authority
Honesty	Fitness
Efficiency	Courage
Innovation	Education
Creativity	Perseverance
Good humor	Patriotism
Compassion	Service to others
Duty	Environmentalism

http://examples.yourdictionary.com/examples-of-core-values.html

MORALITY IN SOCIETY

Examples of morals in society

Always being truthful
Do not gossip
No vandalism
Possess courage
Keep your promises
Do not cheat
Treat others as you want
    to be treated
Be trustworthy
Do not judge others
Being dependable
Respect for others
Be forgiving

Maintain self-control
Have integrity
Accountability and taking
    responsibility
Be patient
Be loyal
Have respect for yourself
Be tolerant of differences
Seek justice
Have humility
Generosity
Helping those in need
Convervationism

http://examples.yourdictionary.com/examples-of-morals.html

ETHICS IN SOCIETY

Ethics logically and rationally determines right from wrong, good from bad, moral from immoral, and just from unjust actions, conduct and behavior.

In organizations, <u>applied ethics</u> takes the form of written rules and guiding principles its members and leaders follow.

Morals are dictated by society, culture and/or religion; whereas, ethics are chosen by people and organizations for the purpose of governing their existence. <u>Morality encompasses the principles of right and wrong; whereas, ethics dictates right and wrong conduct or behavior.</u>
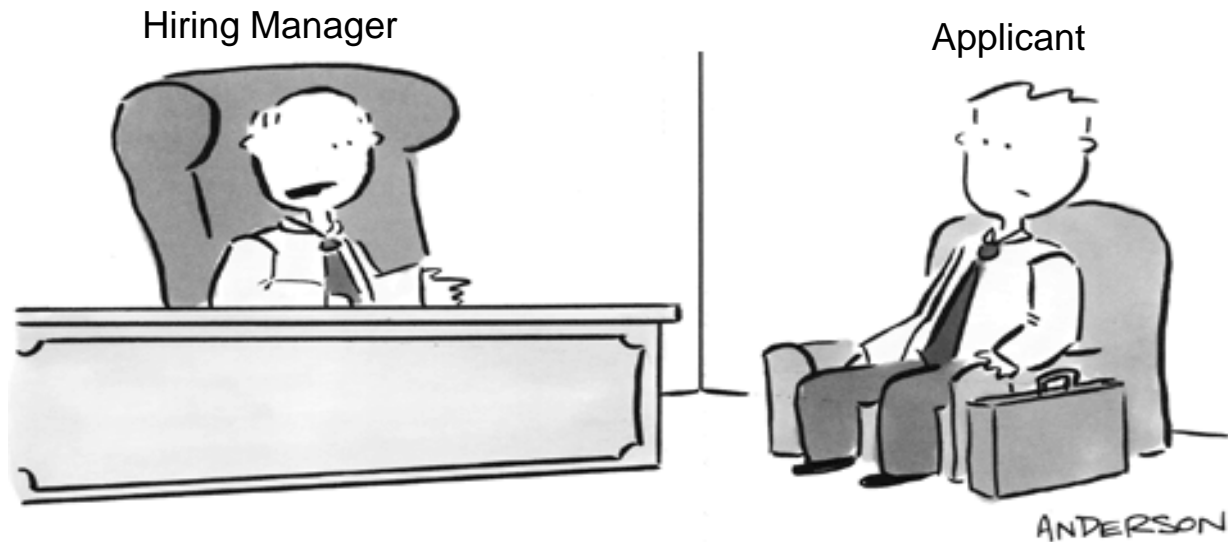
ARE ETHICS & MORALS RELATED?

What is wrong in this cartoon?

© MARK ANDERSON   WWW.ANDERTOONS.COM

Hiring Manager   Applicant

ANDERSON

"What we're looking for is someone with a good work ethic without all those troublesome morals."

https://sma.org/what-were-looking-for-is-someone-with-a-good-work-ethic-without-all-those-troublesome-morals/

ORIGINS OF ETHICAL AND MORAL STANDARDS?

There is a wide spectrum of origins:

- **Instinctual** and **inherent**
- An outcome of **culture**
- Derived from **religion**
- Developed from **logical reasoning**
- Based on **consequences** (feedback)
- **Experience** – what works in practice (*i.e.*, even more feedback)

EXAMPLES OF UNETHICAL BEHAVIOR

Unethical behavior is self-regarding behavior with a negative impact upon society. In the pursuit of one's interests it can result in the suffering of others, the impairment of the well-being of others, or damage to the social environment.

Bullying
Rudeness and disrespect
Criminal behavior in general
Corruption
Taking credit falsely
Badmouthing colleagues
Abuse of power
Arrogance
Conflict of interest

Stealing from others
Discrimination
Exploiting others
Lying to those around you
Cheating on school work
Falsification of data
Breach of confidentiality
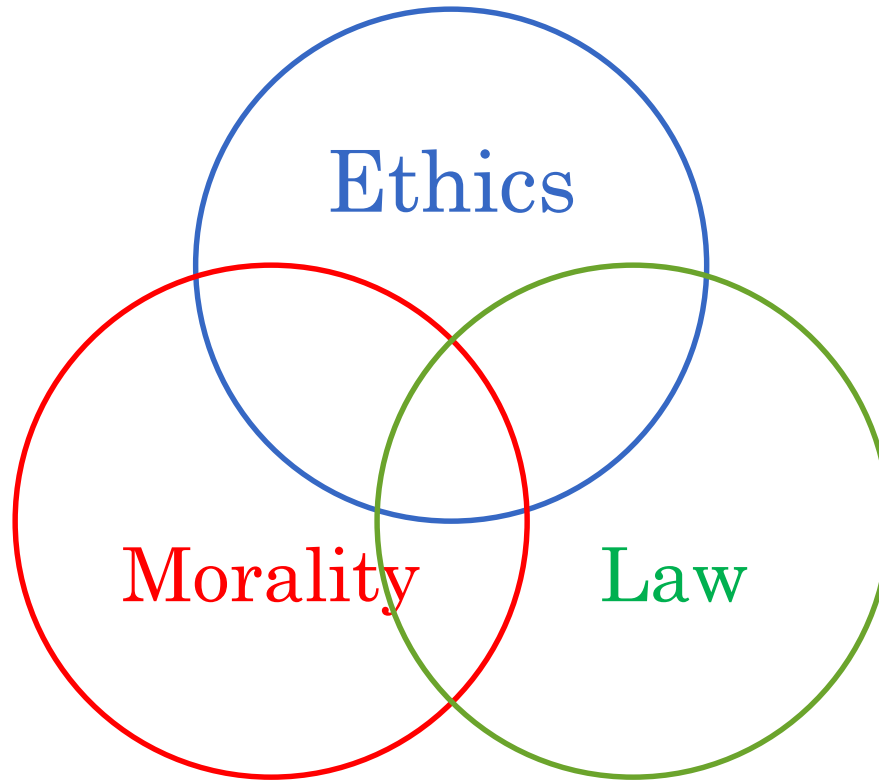Greed
Misrepresentation

AND THERE ARE LAWS

Law is a system of rules, regulations, statutes and legislation that a community, state or country recognizes as regulating the actions of it citizens and <u>enforced</u> by the threat of sanctions and penalties guided by judicial decision.

Some would say that law is the rules of conduct approved and enforced by government of and over a designated territory.

Laws and law enforcement can never completely replace customs, traditions and moral values for regulating human behavior.

THE INTERSECTION OF ETHICS, MORALITY AND LAW

SOME EXAMPLES

EXAMPLE:
SETTING A HIGHER SALES GOAL

In the 1990's management at Sears, Roebuck gave their automotive mechanics a sales goal of $147/hour. The reason for the increase was likely an attempt to increase the speed of automotive repairs in an effort to increase overall revenue in that division.

What do you think happened?

https://hbr.org/2011/04/ethical-breakdowns

SETTING A HIGHER SALES GOAL

In the 1990's management at Sears, Roebuck gave their automotive mechanics a sales goal of $147/hour. The reason for the increase was likely an attempt to increase the speed of automotive repairs in an effort to increase overall revenue in that division.

Outcome:
Rather than work faster employees met the new goal by overcharging for their services and "repairing" things that were not broken.

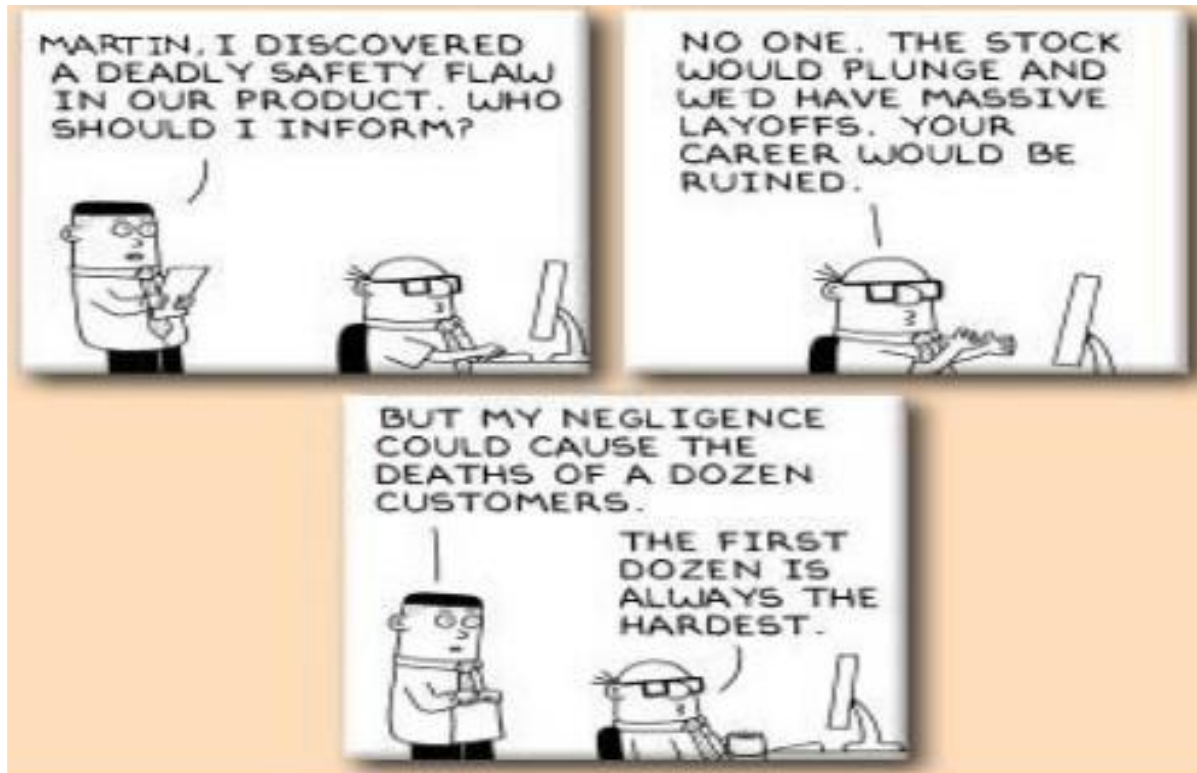https://hbr.org/2011/04/ethical-breakdowns

GENERAL OBSERVATION

The pressure at accounting, consulting, and law firms to maximize billable hours creates comparable perverse incentives. Employees engage in unnecessary and expensive projects and creative bookkeeping to reach their goals.

https://hbr.org/2011/04/ethical-breakdowns
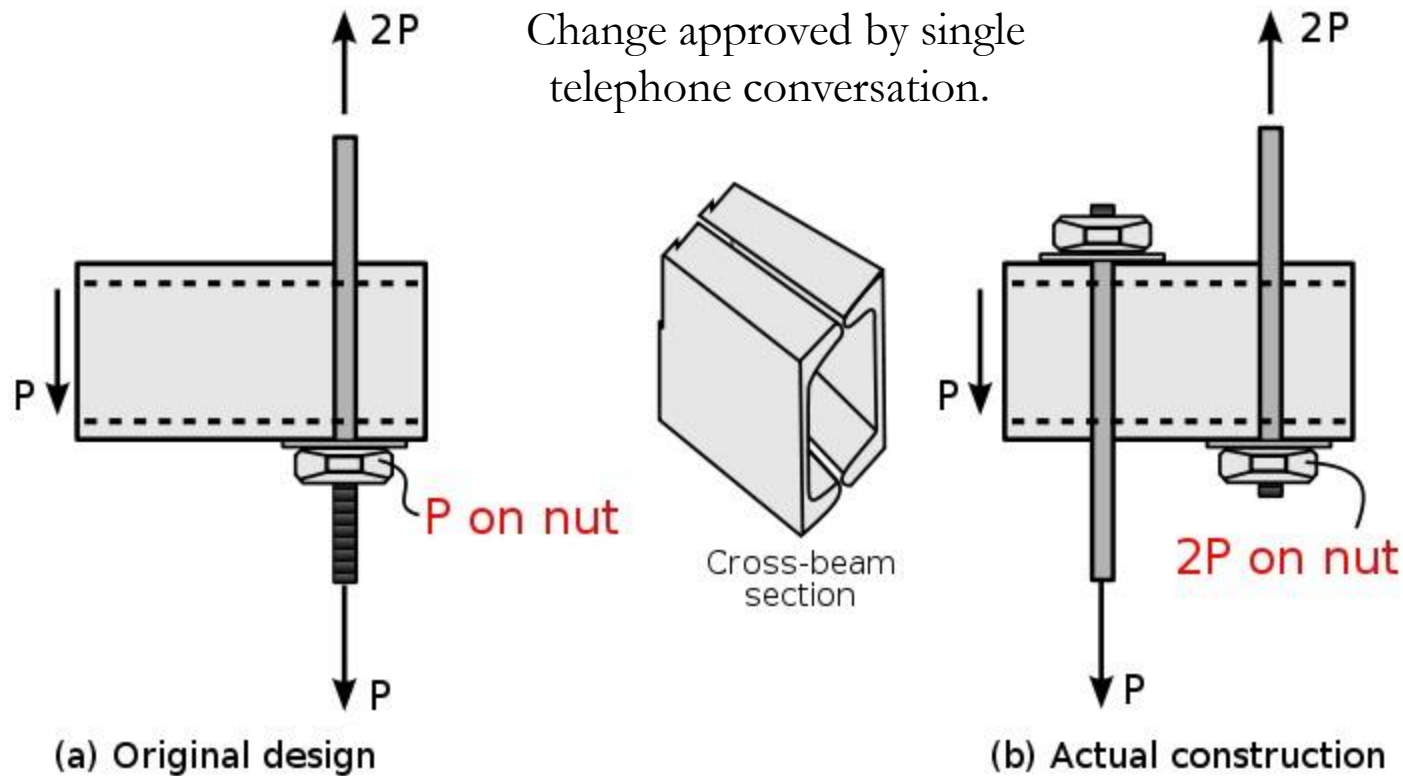
DILBERT CAPTURES REALITY

EXAMPLE: HYATT REGENCY WALKWAY FAILURE (KANSAS CITY 1981)

The Hyatt Regency walkway collapse took place at the Hyatt Regency Kansas City hotel in Kansas City, Missouri, in 1981. Two walkways collapsed onto a tea dance being held in the hotel's lobby. The falling walkways killed 114 and injured 216.

- **Support system was changed in the shop drawings by the steel fabricator**
- **Engineer failed to review the shop drawings and therefore did not understand the change**
- **The change doubled the load on the supports**
- **Engineers were prosecuted**

https://en.wikipedia.org/wiki/Hyatt_Regency_walkway_collapse

HYATT REGENCY WALKWAY FAILURE (SUPPORT SYSTEM CHANGE)

2P

Change approved by single telephone conversation.

2P

P

P on nut

Cross-beam section

P

2P on nut

P

(a) Original design

(b) Actual construction

Resulted in a design capable of withstanding only an estimated 30 percent of the mandated minimum of the building code.

Example: Ford Pinto Gas Tank (1970-1980)

The Pinto was a subcompact car manufactured by the Ford Motor Company for the model years 1971–1980. During the 1970's there were many documented cases of Ford Pintos bursting into flames as a result of rear-end collisions.

Ford's engineers discovered in preproduction crash tests that rear-end collisions would rupture the Pinto's fuel system extremely easily. Several inexpensive modifications were devised to make the Pinto less susceptible to fuel leakage and fire following a rear-end collision. Yet, none were implemented.

https://www.pdhengineer.com/catalog/index.php?route=product/product&product_id=2283

EXAMPLE: FORD PINTO GAS TANK (1970-1980)

"Safety does not sell."

- Ford's "business decision" was based upon "cost/benefit analysis."
- In crashes over 25 miles per hour, the gas tank always ruptured. To correct this would have required changing and strengthening the design. Ford knew how to correct this, but did not.
- Cost: 180 deaths – Ford paid out $49 million.
- Benefit: A recall of 3 million vehicles was estimated to result in a cost of $137 million.

http://www.popularmechanics.com/cars/a6700/top-automotive-engineering-failures-ford-pinto-fuel-tanks/

EXAMPLES AT SSU

EVERYDAY ETHICS EXAMPLE: PLAGIARISM

○ **In writing a report for one of their classes, John uses Google to locate what others have written on the Internet. Rather than expressing the information in your own words, you simply copy bits and pieces from the Internet without using quotation marks and without references to identify the source.**

What is your responsibility in analogous situations?

Reference ➔ **SSU's Policy on Academic Honesty**

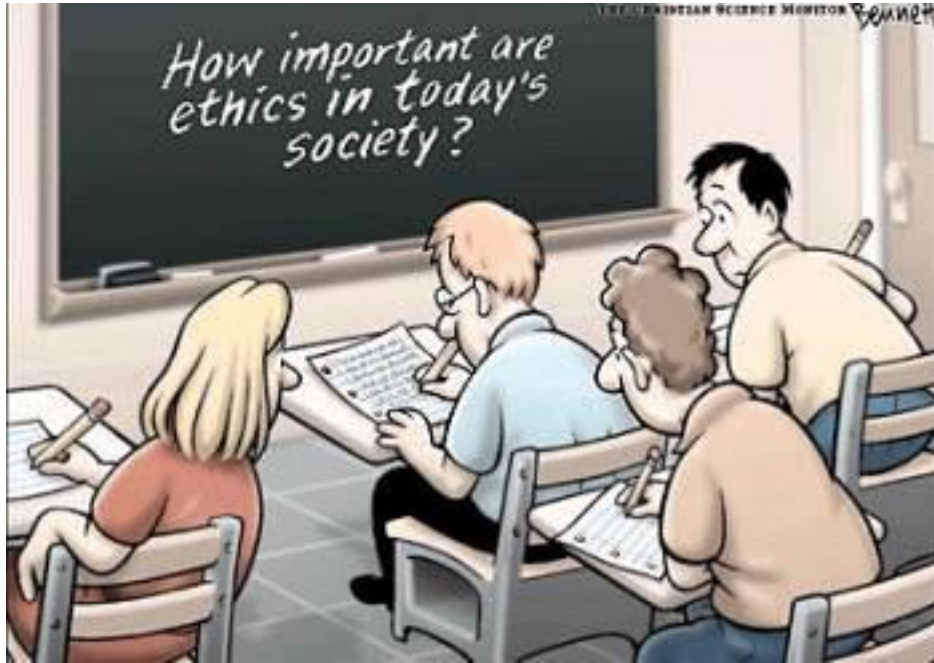# POLICY: SSU POLICY ON CHEATING AND PLAGIARISM

- **Academic Honesty:**
  It is the policy of Sonoma State University to be pro-active in dealing with issues of cheating and plagiarism. Faculty members are encouraged to discuss with students academic ethics and the formulation of one's own intellectual material. It is also the policy of Sonoma State University to impose sanctions on students who cheat or plagiarize. Students are expected to be honest in meeting the requirements of courses in which they are enrolled. Cheating or plagiarism is dishonest, undermines the necessary trust upon which relations between students and faculty are based, and is unacceptable conduct. Students who engage in cheating or plagiarism will be subject to academic sanctions, including a lowered or failing grade in a course; and the possibility of an additional administrative sanction, including probation, suspension, or expulsion.

  http://www.sonoma.edu/uaffairs/policies/cheating_plagiarism.htm

QUESTION: WHY IS CHEATING WRONG?

WHY CHEATING IS WRONG

- Cheating **undermines the credibility** of your university and the degree it awards.

- Cheating hurts the cheater by **denying them the learning experience** they would receive if done honestly. Later as a practicing engineer they will have to learn what they didn't in school.

- Cheating hurts your fellow students when the class grade distribution is skewed due to the act of cheating.

- Also, a cheater probably doesn't feel very good about their act of cheating.

EXAMPLES OF CHEATING

Examples of Cheating

- Hiring someone to write a paper
- Buying a paper or a project
- Sharing files
- Copying homework
- Building on someone else's ideas without proper citations
- Letting your partner do all of the work
- Turning in someone else's work
- Looking at someone else's test
- Turning in your brother or sister's old work

https://slideplayer.com/slide/8506548/

GUIDELINES FOR CITING THE WORK OF OTHERS

When do you need to cite another person's work?

Whenever you borrow words or ideas, you need to acknowledge their source. The following situations almost always require citation:

- whenever you use quotes
- whenever you paraphrase
- whenever you use an idea that someone else has already expressed
- whenever you make specific reference to the work of another
- whenever someone else's work has been critical in developing your own ideas.

http://www.plagiarism.org/citing-sources/whats-a-citation

ANOTHER ETHICAL SITUATION EXAMPLE

- You and your roommate are enrolled in the same class. Your roommate spent the weekend partying and did not do the homework due Monday. **You did the homework**, and **your roommate asks to see it.** You are afraid he/she will just copy it and turn it in as his/her own work.

  What would you do?

ANOTHER ETHICAL SITUATION:

- You and your roommate are enrolled in the same class. Your roommate spent the weekend partying and did not do the homework due Monday. **You did the homework**, and **your roommate asks to see it.** You are afraid he/she will just copy it and turn it in as his/her own work.

Five Possible Responses:

a. Show your roommate the homework.

b. Show the homework but ask your roommate not to copy it.

c. Show the homework and tell the roommate that if the homework is copied, you will tell the professor.

d. Refuse to show the homework but offer to spend time tutoring the roommate.

e. Refuse to show the homework.

TI's Quick Test for "Is It Ethical?"

TEXAS INSTRUMENTS

- **Is the action legal?**

- **Does it comply with our values?**

- **If you do it, will you feel bad?**

- **How would it look if in the newspaper?**

- **If you know it's wrong, then don't do it!**

- **If you're not sure, ask.**

- **Keep asking until you get an answer.**

This information is provided to TI employees on a business-card size mini-pamphlet to carry with them. For copies of the card or further information, contact the TI Ethics Office at 1-800-33-ETHIC.

http://www.ti.com/corp/docs/csr/2010/downloads/ethics.pdf

PROFESSIONAL ETHICS

PROFESSIONAL ETHICS: IT'S MORE THAN JUST FOLLOWING THE RULES

- Maturity of judgment

- Balancing a variety of considerations

- Consideration of various means to a desired end

- Supporting the **integrity of the profession**

- Serving the **welfare of the general public**

ETHICS AND YOUR EE EDUCATION

The **IEEE** has specifically set forth a **code of ethics.**

ABET accreditation for SSU's EE program requires that our graduates have **"an understanding of professional and ethical responsibility."**

The **National Institute for Engineering Ethics** & **National Society of Professional Engineers** have published core ethical values for engineering practice. And so have many other engineering societies.

WHAT IS A PROFESSION?

- Extensive training, mastery of subject
- Professional association
- Standards and codes
- Self-regulating, via certifications and licensing
- Significant impact on public welfare
- Accountability to society

Therefore . . . Engineering is a Profession.

YOUR RELATIONSHIP TO ENGINEERING ETHICS

- You already convey your personal ethical standards. They are revealed by what you do.

- Personal and professional ethics are closely connected.

- Ethics is more than "doing the right thing," it's making tough decisions under sometimes ambiguous circumstances.

Ethical Issues Encountered

- Safety
- Acceptable risk
- Compliance
- Confidentiality
- Environmental health
- Data integrity
- Conflict of interest
- Honesty/Dishonesty
- Societal impact
- Fairness
- Legality
- Account for uncertainties

WHY HAVE A PROFESSIONAL CODE OF ETHICS?

Engineers should follow a professional code of ethics because:

A. The <u>public</u> will <u>trust</u> engineers more if they know they have a code of ethics.

B. It helps them <u>avoid legal problems</u>, such as being sued or imprisoned.

C. It provides a clear definition of what the <u>public has a right to expect</u> from responsible engineers.

D. It <u>raises the image</u> of the profession and hence results in engineers being paid more.

IEEE CODE OF ETHICS

We, the members of the IEEE, in recognition of the importance of our technologies in affecting the quality of life throughout the world, and in accepting a personal obligation to our profession, its members and the communities we serve, do hereby commit ourselves to the highest ethical and professional conduct and agree:

IEEE Code of Ethics (continued)

1. **to accept responsibility in making engineering decisions consistent with the safety, health and welfare of the public, and to disclose promptly factors that might endanger the public or the environment;**

2. **to avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist;**

3. **to be honest and realistic in stating claims or estimates based on available data;**

4. **to reject bribery in all its forms;**

5. **to improve the understanding of technology, its appropriate application, and potential consequences;**

IEEE CODE OF ETHICS (CONTINUED)

6. **to maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations;**

7. **to seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributions of others;**

8. **to treat fairly all persons regardless of such factors as race, religion, gender, disability, age, or national origin;**

9. **to avoid injuring others, their property, reputation, or employment by false or malicious action;**

10. **to assist colleagues and co-workers in their professional development and to support them in following this code of ethics.**

Approved by the IEEE Board of Directors -- August 1990

CORE ETHICAL VALUES FOR ENGINEERING? (NIEE)

(NIEE = National Institute for Engineering Ethics)

- **Honesty:** truthfulness, fairness, sincerity
- **Integrity:** good judgment, adherence to principles
- **Fidelity*:** to clients, to the public trust, to employer, to the profession
- **Charity:** kindness, caring, good will, tolerance, compassion/mercy, adherence to the Golden Rule
- **Responsibility:** reliability/dependability, accountability, trustworthiness
- **Self-Discipline:** acting with restraint, not indulging in excessive behavior

* Fidelity means faithfulness, loyalty, constancy, . . .

GOOGLE SEARCH:

- Online Ethics Center for Engineering & Science

- **National Institute for Engineering Ethics***

- National Society of Professional Engineers Ethics website https://www.nspe.org/resources/ethics/code-ethics

- Codes of Ethics: <u>IEEE</u>, ASME, ACM, <u>NSPE</u>, etc.

- Web Clearinghouse for Engineering and Computing Ethics

- Course and resource pages at many universities and colleges

- And of course, many more references . . .

*http://www.depts.ttu.edu/murdoughcenter/center/niee/

Additional Slides

CONSEQUENCES