Ethics and Engineering

Business Ethics

- Ethics concern an individual's moral judgements about right and wrong.
- Decisions taken within an organization may be made by individuals or groups, but whoever makes them will be influenced by the culture of the company.
- The decision to behave ethically is a moral one; employees must decide what they think is the right course of action.
- This may involve rejecting the route that would lead to the biggest short-term profit.

- Business ethics reflects the philosophy of business, of which is to determine the fundamental purposes of a company.
- Business ethics are often guided by law.
- And other times, business ethics provide a basic framework that businesses may choose to follow in order to gain public acceptance.

Potentially controversial issues

- corporate governance (kurumsal yonetisim),
- insider trading (içerden bilgi ticareti),
- Bribery (rusvet, yolsuzluk) ,
- Discrimination (ayrımcılık),
- Corporate social responsibility (kurumsal sosyal sorumluluk), and
- fiduciary responsibilities (guvene dayanan sorumluluk).

What is Engineering Ethics?

- Engineering Ethics is the study of moral issues and decisions confronting individuals and organizations engaged in engineering.
- Engineering Ethics is the study of related questions about moral ideals, character, policies and relationship of people and corporations involved in technological activity.

Why Study Engineering Ethics?

- **What is the point in studying engineering ethics?**
- **What can be gained from taking a course in ethics?**
- **Engineering ethics course is not about preaching virtue rather, its objective is to increase your ability as engineers to responsibly confront moral issues raised by technological activity.**

Code of Ethics for Engineers

-The Fundamental Principles-

- **Engineers uphold and advance the integrity, honor and dignity of the engineering profession by:**
  - **Using their knowledge and skill for the enhancement of human welfare;**
  - **Being honest and impartial, and serving with fidelity the public, their employers and clients:**
  - **Striving to increase the competence and prestige of the engineering profession; and**
  - **Supporting the professional and technical societies of their disciplines.**

Fundamental Rules

- **Engineers shall hold paramount the safety, health and welfare of the public in the performance of their professional duties.**
- **Engineers shall perform services only in the areas of their competence.**
- **Engineers shall issue public statements only in an objective and truthful manner.**
- **Engineers shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest.**

Fundamental Rules

- **Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.**
- **Engineers shall act in such a manner as to uphold and enhance the honor, integrity and dignity of the profession.**
- **Engineers shall continue their professional development throughout their careers and shall provide opportunities for the professional development of those engineers under their supervision.**

Why Practice Engineering Ethically?

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

- *"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"*

Ref: Martin and Schinziger, Ethics in Engineering

Seven Principles Impacting Each Engineering Ethics 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

1- Protecting The Public Health, Safety and Welfare

- Conformance with Applicable Standards
- Responsible Charge/Responsible Control
- Judgment Overruled
- Awareness of Safety Violations
- Awareness of Illegal Practice

2- Demonstrating Professional Competence

- Education, Experience, Qualifications
- Acceptance of Assignment
- Signing and Sealing of Work
- Coordination of Work
- Scope of Practice

3- Maintaining Objectivity/Truthfulness/Non-Deception

- Inclusion of All Relevant Information
- Issuance of Public Statements
- Disclosure to Interested Parties
- Expression of Technical Opinions
- Reviewing Work of Another
- Sales and Marketing Practice

4- Addressing Conflicts of Interest

- Faithful Agent and Trustee
- Avoid vs. Disclosure
- Acceptance of Compensation from More Than One Party

5- Preserving Confidentiality

- Business or Technical Affairs of
- Employers/Clients
- Proprietary Information/Files
- Arranging for New Employment or Business Opportunities
- Consent

6- Receiving and Providing Gifts and Other Valuable Consideration

- Accepting Consideration from Suppliers for
- Specifying Product
- Accepting Commissions/Allowances Directly from
- Contractors
- Political Contributions - Bribery

7- Emerging Areas/Emerging Challenges – Technology

- Use of Internet and Electronic Practice
- Sustainable Design/Development
- Environmental Considerations - Alternative Project Delivery
- Integrated Project Delivery
- Building Information Modeling - Design/Build

Sample Code

- Babylon's Building Code (Hammurabi's Code)

If a builder has built a house for a man and has not made his work sound, and the house which he has built has fallen down and so caused the death of the house-holder, the builder should be put to death .....

ISO 26000 Social Responsibility

- In 2010 the International Standards Organization published "**Guidance for Social Responsibility**"

- This document is not a "standard, but a voluntary framework to aid organizations in moving closer to socially responsible behavior.

ISO 26000 Social Responsibility

- **Seven Principles of Social Responsibility**
  - (1) Accountability,
  - (2) Transparency,
  - (3) Ethical Behavior,
  - (4) Respect for Law,
  - (5) Respect for Stakeholder's Interests,
  - (6) Respect for Human Rights and
  - (7) Respect for International Norms of Behavior

ISO 26000 Social Responsibility

- ***Seven Core Subjects of Social Responsibility***
  - (1) Labor Practices,
  - (2) Human Rights,
  - (3) Organizational Governance,
  - (4) Fair Operating Practices
  - (5) Consumer Issues,
  - (6) The Environment and
  - (7) Community Involvement and Development

Engineering Ethics

- *"Good people do not need laws to tell them to act responsibly, while bad people will find a way around the laws..."*

- Plato

REFERENCES

- **1.Martin, Mike & Schinzinger, Ronald: Ethics in Engineering, 3rd Ed. McGraw Hill**
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