SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
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DEPARTMENT OF MECHANICAL ENGINEERING

19GET201 – PROFESSIONAL ETHICS AND HUMAN VALUES

IV YEAR / VII SEM

UNIT II ENGINEERING AS SOCIAL EXPERIMENTATION

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Engineering as Experimentation – Engineers as responsible Experimenters – Codes of Ethics – A Balanced Outlook on Law –Plagiarism- Case studies

ENGINEERING AS EXPERIMENTATION

A balanced outlook on laws stresses the necessity of laws and regulations and their limitations in directing engineering practice.

In order to live, work and play together in harmony as a society, there must be a balance between individual needs and desires against collective needs and desires. Only ethical conduct can provide such a balance.

This ethical conduct can be applied only with the help of laws. Laws are important as the people are not fully responsible and because of the competitive nature of the free enterprise system which does not encourage moral initiative. The model of engineering as social experimentation allows for the importance of clear laws to be effectively enforced. Engineers ought to play an effective role in promoting or changing enforceable rules of engineering as well as in enforcing them. So the codes must be enforced with the help of laws. The following are the two best examples.

1. Babylon's Building Code: (1758 B.C.)

This code was made by Hammurabi, king of Babylon. He formed a code for builders of his time and all the builders were forced to follow the code by law. He ordered "If a builder has built a house for a man and has not made his work sound, and the house which he has built was fallen down and so caused the death of the householder, that builder shall be put to death.

If it causes the death of the house holder's son, they shall put that builder's son to death. If it causes the death of the house holder's slave, he shall give slave to the householder. If it destroys property he shall replace anything it has destroyed; and because he has not made the house sound which he has built and it has fallen down, he shall rebuild the house which has fallen down from his own property. If a builder has built a house for a man and does not make his work perfect and the wall bulges, that builder shall put that wall in to sound condition at his own cost". The above portion of Babylon's building code was respected duly. But the aspects find only little approval today. This code gives a powerful incentive for self regulation.

ENGINEERING CODES OF ETHICS

Engineering Codes of Ethics have evolved over time

EARLY CODES

• Codes of personal behavior • Codes for honesty in business dealings and fair business practices

NEWER CODES

• Emphasize commitments to safety, public health and environmental protection
• Express the rights, duties and obligations of members of the Profession
• Do not express new ethical principles, but coherently restate existing standards of responsible engineering practice
• Create an environment within the Profession where ethical behavior is the norm
• Not legally binding; an engineer cannot be arrested for violating an ethical code (but may be expelled from or censured by the engineering society)

ENGINEERS AS RESPONSIBLE EXPERIMENTERS

- Engineers are primarily considered as technical enablers or facilitators, rather than being the sole experimenters.
- Engineers‘ responsibility is shared with management, the public and others.
- The other unique responsibility of engineers include monitoring projects, identifying risks, providing customers and clients the required information to make reasonable decisions.
- While exercising engineering duties, the engineers should display the virtue of being morally responsible person.

General features of moral responsible engineers:

1. Conscientiousness
2. Relevant information
3. Moral Autonomy
4. Accountability

Conscientiousness:

- Conscientiousness means commitment to live according to certain values. It implies conscientiousness.
- Engineers have to be sensitive to a range of moral values and responsibilities, which are relevant in a given situation.

Relevant information:

- Conscientiousness is impossible without relevant factual information
- Engineers have to show the commitment to obtain and properly gauge all the information related to meeting one‘s moral obligations.

Moral autonomy:

ü The moral autonomy is the ability to think critically and independently about moral issues and apply this moral thinking to situations that arise during the professional engineering practice.

ü It is understood that an individual personality depends on the integration of his moral benefits and attitude

Code of Ethics for Engineers

Accreditation Board for Engineering and Technology (ABET)

The Fundamental Principles Engineers shall uphold and advance the integrity, honor, and dignity of the engineering profession by:

- using their knowledge and skill for the enhancement of the human race;
- 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.
- supporting the professional and technical societies of their discipline.

The Fundamental Cannons

Engineers shall

- Hold paramount the safety, health, and welfare of the public in the performance of their professional duties;
- perform service only in areas of their competence;
- issue public statements only in an objective and truthful manner;
- act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest;
- build their professional reputations on the merits of their services and shall not compete unfairly with others.

CODES OF ETHICS - ROLES OR FUNCTIONS

1. Inspiration and Guidance:

- Codes provide positive stimulus for ethical conduct and helpful guidance by using positive language.
- Codes should be brief to be effective and hence such codes offer only general guidance.
- Supplementary statements or guidelines to give specific directions are added by a number of societies or professional bodies.

2. Support:

- Codes give positive support to those seeking to act ethically.
- An engineer under pressure to act unethically can use one of the publicly proclaimed codes to get support for his stand on specific moral issues.
- Codes also serve as legal support for engineers.

3. Deterrence and discipline:

- Codes can be used as a basis for conducting investigations on unethical conduct.
- They also provide a deterrent for engineers to act immorally.
- Engineers who are punished by professional societies for proven unethical behavior by revoking the rights to practice as engineers are also subjected to public ridicule and loss of respect from colleagues and local community.

 This helps to produce ethical conduct even though this can be viewed as a negative way of motivation.

4. Education and mutual understanding:

The codes can be used for discussion and reflection on moral issues and thereby improves the understanding of moral responsibilities among all engineers, clients, public and good organizations.

5. Contributing to the profession's public image:

Codes present the engineering profession as an ethically committed society in the eyes of the public thus enhancing their image.

6. Protecting status quo:

Codes establish ethical conventions, which can help promote an agreed upon minimum level of ethical conduct.

7. Promoting business interests:

Codes can place unwarranted restraints of commerce on business dealings.

Limitations of Codes of Ethics

1. Codes are restricted to general and vague wording. They cannot be straightaway applied to all situations. It is impossible to foresee the full range of moral problems that can arise in a complex profession like engg.

2. It is easy for different clauses of codes to come into conflict with each other. Usually codes provide no guidance as to which clause should have priority in those cases, creating moral dilemmas.

3. They cannot serve as the final moral authority for professional conduct. If the code of a professional society is taken as the last word, it means that we are getting into a particular set of conventions i.e. ethical conventionalism.

4. Andrew Oldenquist and Edward Slowter pointed out how the existence of separate codes for different professional societies can give members the feeling that ethical conduct is more relative than it is and that it can convey to the public the view that none is „really right". The current codes are by no means perfect but are definitely steps in the right direction.

Thank You