Unit V

Multinational corporations - Business ethics - Environmental ethics - computer ethics - Role in Technological Development - Weapons development - engineers as managers - consulting engineers - engineers as expert - witnesses and advisors - Honesty - Leadership - sample code of conduct ethics like ASME - ASCE - IEEE - Institution of Engineers (India) - Indian Institute of Materials Management - Institution of Electronics and Telecommunication Engineers (IETE India)

Computer Ethics

- Nov. 2007 – UK – Major Security Breach to the police – 25 million British Citizens (Financial Terror) – (PM Gordon Brown)
- Scale of concern about privacy and Security in the age of computers …
- To evaluate and deal with these issues, a new area of Applied Ethics called computer ethics…

Computer Ethics

- The Internet as Free Speech
- Powerful relationship results in:
  - Job elimination
  - Customer relation
  - Biased Software
  - Stock Trading
  - Military Weapons
  - Property
  - Embezzlement
  - Data and software
  - Privacy
  - Inappropriate Access

ENGINEERS AS EXPERT WITNESS

- Frequently engineers are required to act as consultants and provide expert opinion and views in many legal cases of the past events.
- They are required to explain the causes of accidents, malfunctions and other technological behavior of structures, machines, and instruments, e.g., personal injury while using an instrument, defective product, traffic accident, structure or building collapse, and damage to the property, are some of the cases where testimonies are needed. The focus is on the past.

Eye-witness and expert-

witness ***Eye-witness***

1. Eye-witness gives evidence on only what has been seen or heard actually (perceived facts)

Expert-witness

1. Gives expert view on the facts in their area of their expertise
2. Interprets the facts, in term of the cause and effect relationship
3. Comments on the view of the opposite side
4. Reports on the professional standards, especially on the precautions when the product is made or the service is provided

Expert-witness can be used as following manners:

- Hired Guns (Lawyers – White Lies and Distortions)
- Money Bias
- Ego Bias
- Sympathy Bias

ENGINEERS AS ADVISORS IN PLANNING AND POLICY MAKING Advisors

- Various issues and requirements for engineers who act as advisors are:
  - Objectivity
  - Study all aspects
  - Technical complexity
  - National Security
  - Value Neutral Analysts
  - Value Guided advocates

Moral Leadership

- Engineers provide many types of leadership in the development and implementation of technology, as managers, entrepreneurs, consultants, academics and officials of the government.
- Moral leadership is not merely the dominance by a group. It means adopting reasonable means to motivate the groups to achieve morally desirable goals.

Moral leadership is essentially required for the engineers, for the reasons listed as follows:

1. It is leading a group of people towards the achievement of global and objectives. **The goals as well as the means are to be moral**.
2. The leadership shall direct and motivate the group to move through **morally desirable ways**.
3. They lead by thinking ahead in time, and morally creative towards new applications, extension and putting values into practice. **'Morally creative'** means the identification of the most important values as applicable to the situation, bringing clarity within the groups through proper communication, and putting those values into practice.
4. They sustain professional interest, among **social diversity and cross-disciplinary complexity.** They contribute to the professional societies, their professions, and to their communities. The moral leadership in engineering is manifested in leadership within the professional societies. The professional societies provide a forum for communication, and canvassing for change within and by groups.

IEI

- The Institution of Engineers (India) [IEI] is the largest multi-disciplinary professional body of engineers, established in 1920 with its Headquarters located in Kolkata and incorporated under Royal Charter on 9th September, 1935 by the then His Majesty of King George V. The Royal Charter endowed the Institution with the responsibility to promote the general advancement of engineering amongst its members and persons attached to the Institution. After Independence, the Institution is a “Body Corporate” protected under Article 372 of the Constitution of India. The Institution of Engineers (India) is administered by a National Council with the President as its Head.

IEI

- After First World war, the Industrialization were on rise and the engineering activity took a positive shape in India. As a consequence, need was felt to uphold the quality in products and operations of the Engineering domain. Accordingly Government of India formed an Indian Industrial Commission under the Chairmanship Sir Thomas Holland, the then Commerce member of the then Govt. of India. The commission recommended the establishment of an Institution as a professional body of engineers to ensure advancement of technology and uphold the quality of products in various stages of production.

IEI

- To promote the general advancement of engineering and their application
- Grant certificate of competency for practice of Engineering Profession
- Arrange and promote for settlement of disputes in Engineering by arbitration and act as or nominate arbitrators
- Confer to the Government and other bodies the views regarding matters directly or indirectly affecting the Engineering profession
- Promote study of Engineering through R & D activities and grants
- Encourage elevate and recognize the technical knowledge and practice of individuals and organizations through scholarships, awards and other benefaction
- Pioneer in providing Non-formal Engineering Education (popularly known as AMIE Exam) in India
- Dissemination and updating of engineering and technological knowledge among its members, through Technical Activities
- Inculcating and promoting amongst engineers and technologists a growing commitment to the social objectives of the profession

Chartered Engineer

- As per the Declaration No.16 of the Royal Charter, 1935 and Clause 69(i) of the Bye-Laws & Regulations of the Institution, every Corporate Member (FIE/MIE/AMIE) is entitled to use the style and title of Chartered Engineer (India).
- It has been observed that the Chartered Engineer certificate is often useful for the following purpose:-
- To be empanelled as Valuer, Loss Assessor in various financial institutions like Bank, Insurance companies etc.
- To be empanelled as Chartered Engineer in the Original Side of High Courts, Central Excise and Customs and other similar govt concerns.
- To win contract of civil works from Municipal Corporation and similar govt bodies.
- To be employed and/or promoted in foreign companies.
- To practice as self employed consultant in India and abroad.

Practicing Chartered Engineer

- The Council at its 713th Meeting held at Hyderabad decided to introduce a Certificate of Practice bearing a **Practice Registration Number (PR No.**) which would be **for five years**.
- **Eligibility Criteria :**
- Candidate should be a Corporate Member of The Institution of Engineers (India).
- Candidate must possess Chartered Engineer Certificate from The Institution of Engineers (India) in the current grade of membership.
- Candidate must have minimum five years of experience as an engineer in the relevant field.

Career Advancement

- The Institution of Engineers (India) is devoted to promote the efficiency and ethical practice in engineering services and committed to disseminate the information on the recent developments in engineering amongst the professionals. IEI helps engineering professionals to undertake planned and structured Training Programmes, attend Seminars, Workshops, etc. for Continual Professional Development (CPD) of the professionals.
- IEI supports Continuing Professional Development to its Members and Engineering Professionals in following ways:-
- **Training Program at Engineering Staff College of India:** Engineering Staff College of India (ESCI) is an autonomous organ of 'The Institution of Engineers (India)'. ESCI was established with the mandate of providing quality training and education in engineering and techno-management domains.The primary objective of ESCI is to impart professional and need-based continuing professional development and training in frontier areas of Engineering, Scientific and Management fields, simultaneously providing professional consultancy and technical services to the industry. ESCI's operations are firmly grounded in its desire to act as a bridge between academic institutions.

Career Advancement

- **Technical Activities at Different parts of the Country**: The Institution of Engineers (India) conducts various technical activities like International Conference, National Convention, All India Seminar / Workshop, One Day Seminar in various parts of the country. The topics of these technical activities are in parity the recent development and requirement of the engineering and sciences and the speakers are the leader of industry and academics. For Program Diary Please click
- **Awards & Scholarship**: IEI present a number of awards recognizing Professional performance in different branches of engineering. Also gives a range of scholarships which helps the engineers to advance their career and get more experience professionally.

Eight Cardinal Rules of Academic Integrity

1. **Know your rights.** Do not let other students in your class diminish the value of your achievement by taking unfair advantage. Report any academic dishonesty you see.

2. **Acknowledge your sources.** Whenever you use words or ideas that are not your own when writing a paper, use quotation marks where appropriate and cite your source in a footnote, and back it up at the end with a list of sources consulted.

3. **Protect your work.** In examinations, do not allow your neighbors to see what you have written; you are the only one who should receive credit for what you know.

4. **Avoid suspicion.** Do not put yourself in a position where you can be suspected of having copied another person's work, or of having used unauthorized notes in an examination. Even the appearance of dishonesty may undermine your instructor's confidence in your work.

5. **Do your own work.** The purpose of assignments is to develop your skills and measure your progress. Letting someone else do your work defeats the purpose of your education, and may lead to serious charges against you.

6. **Never falsify a record or permit another person to do so.** Academic records are regularly audited and students whose grades have been altered put their entire transcript at risk.

7. **Never fabricate data, citations, or experimental results.** Many professional careers have ended in disgrace, even years after the fabrication first took place.

8. **Always tell the truth when discussing your work with your instructor.** Any attempt to deceive may destroy the relation of teacher and student.