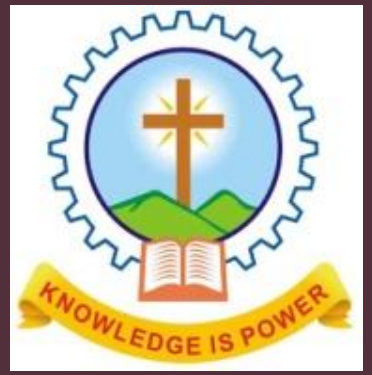
MODULE 1

HUMAN VALUES



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What are the Human Values?

- Values are our guidelines for our success - our paradigm about what is acceptable.
- Human behavior depends on the characters defining the identity, choosing the values and establishing the beliefs.
- Human values includes
  - morals,
  - integrity,
  - peaceful life,
  - respecting others,
  - honesty(Truthfulness and trustworthiness),
  - caring,
  - kindness,
  - courage,
  - sharing,
  - time management,
  - adjustment(co-operation),
  - self confidence,
  - commitment, spirituality and
  - Service-learning a teaching method which combines community service with academic instruction as it focuses on critical, reflective thinking and civic responsibility.

Morals

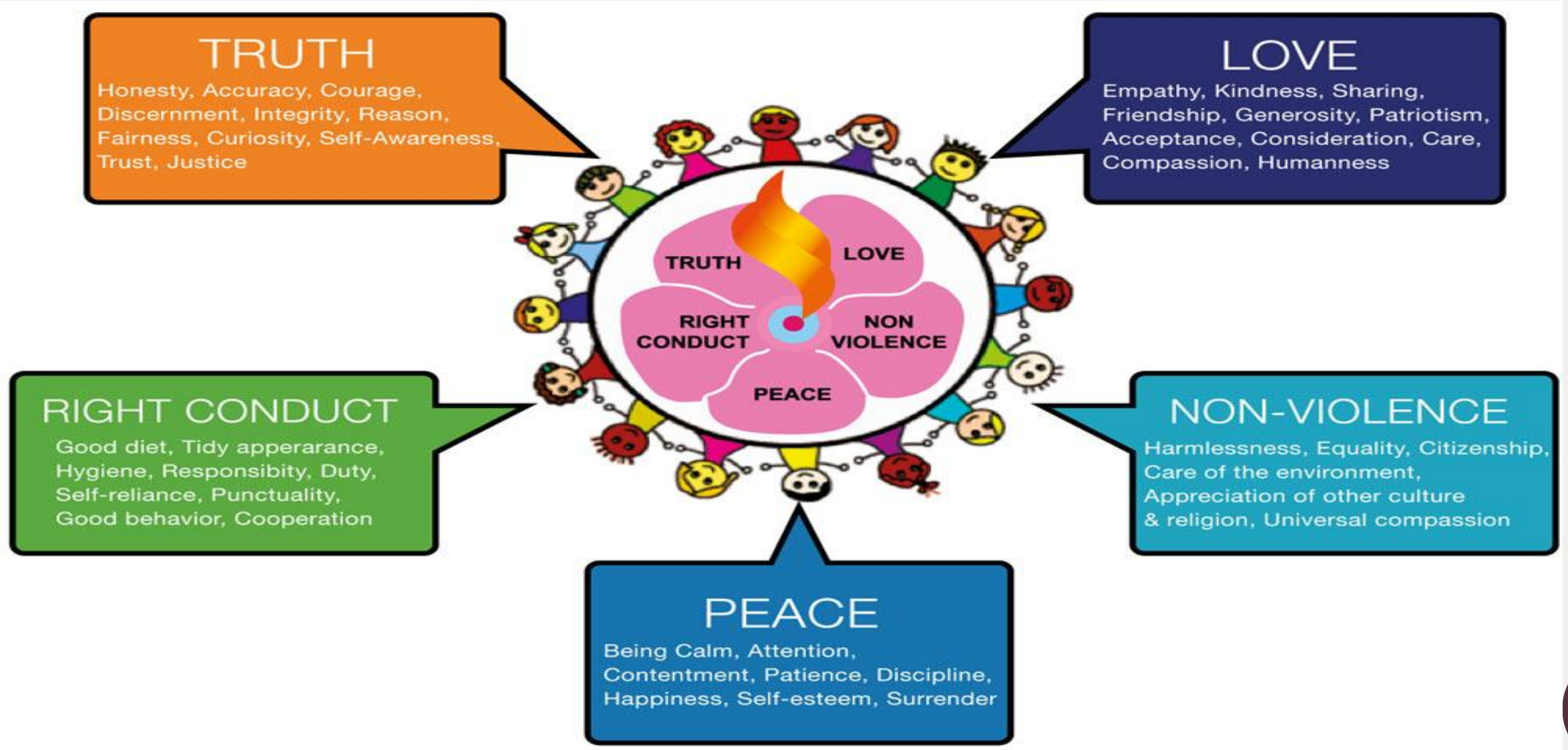
- Morals are the welfare principles enunciated by the wise people, based on their experience and wisdom.
- They were edited, changed or modified or evolved to suit the geography of the region, rulers (dynasty), and in accordance with development of knowledge in science and technology and with time.
- Morality is concerned with principles and practices of morals such as:
  - (*a*) What ought or ought not to be done in a given situation?
  - (*b*) What is right or wrong about the handling of a situation?
  - (*c*) What is good or bad about the people, policies, and ideals involved?
- As against morals and ethics, laws are norms, formally approved by state, power or national or international political bodies.
- Breaking the norms is called *crime*, and invite specific punishment.

Morality	*Ethics*
1. More general and prescriptive based on customs and traditions.	1. Specific and descriptive. It is a critical reflection on morals.
2. More concerned with the results of wrong action, when done.	2. More concerned with the results of a right action, when not done.
3. Thrust is on judgment and punishment, in the name of God or by laws.	3. Thrust is on influence, education, training through codes, guidelines, and correction.
4. In case of conflict between the two, morality is given top priority, because the damage is more. It is more common and basic.	4. Less serious, hence second priority only. Less common. But relevant today, because of complex interactions in the modern society.
5. Example: Character flaw, corruption, extortion, and crime.	5. Example: Notions or beliefs about manners, tastes, customs, and towards laws.

Values

- Humans have the unique ability to define their identity, choose their values and establish their beliefs.
- All three of these directly influence a person's behavior.
- People have gone to great lengths to demonstrate the validity of their beliefs, including war and sacrificing their own life! Conversely, people are not motivated to support or validate the beliefs of another, when those beliefs are contrary to their own.
- A value is defined as *"a principle that promotes well-being or prevents harm."*
- Another definition is: *"Values are our guidelines for our success—our paradigm about what is acceptable."*
- Personal values are defined as: *"Emotional beliefs in principles regarded as particularly favorable or important for the individual."*
- Our values associate emotions to our experiences and guide our choices, decisions and actions.

Types of Values



Evolution of Human Values

- The human values evolve because of the following factors:

1. The impact of norms of the society on the fulfillment of the individual's needs or desires.

2. Developed or modified by one's own awareness, choice, and judgment in fulfilling the needs.

3. By the teachings and practice of Preceptors (Gurus) or Saviors or religious leaders.

4. Fostered or modified by social leaders, rulers of kingdom, and by law (government).

Ethics

- Ethics is the word that refers to morals, values, and beliefs of the individuals, family or the society.
- Basically it is an activity and process of inquiry.
- Secondly, it is different from non-moral problems, when dealing with issues and controversies.
- Thirdly, ethics refers to a particular set of beliefs, attitudes, and habits of individuals or family or groups concerned with morals.
- Fourth, it is used to mean 'morally correct'.
- The study on ethics helps to know the people's beliefs, values, and morals, learn the good and bad of them, and practice them to maximize their well-being and happiness.
- It involves the inquiry on the existing situations, form judgments and resolve the issues.
- In addition, ethics tells us how to live, to respond to issues, through the duties, rights, responsibilities, and obligations.

Integrity

- Integrity is defined as the unity of thought, word and deed (honesty) and open mindedness.
- It includes the capacity to communicate the factual information so that others can make well-informed decisions.
- It yields the person's 'peace of mind', and hence adds strength and consistency in character, decisions, and actions.
- This paves way to one's success.
- It is one of the self-direction virtues.
- It enthuse people not only to execute a job well but to achieve excellence in performance.
- It helps them to own the responsibility and earn self-respect and recognition by doing the job.
- Moral integrity is defined as a virtue, which reflects a consistency of one's attitudes, emotions, and conduct in relation to justified moral values.

Academic Integrity

- Academic integrity combines five fundamental values all academic work.

- Work ethics is defined as a set of attitudes concerned with the value of work, which forms the motivational orientation.
- The 'work ethics' is aimed at ensuring the
  - Economy (get job, create wealth, earn salary),
  - productivity (wealth, profit),
  - safety (in workplace),
  - health and hygiene (working conditions),
  - privacy (raise family),
  - security (permanence against contractual, pension, an retirement benefits),
  - cultural and social development (leisure, hobby, and happiness),
  - welfare (social work),
  - Environment (anti-pollution activities), and
  - offer opportunities for all, according to their abilities, but without discrimination.

- Human beings believe that it is good to work.
- Work is good for the body and mind.
- It promotes self-respect, self-esteem, good for the family, and obligation to the society and allow the world to prosper.
- Work lays a moral and meaningful foundation for life, ie why work ethics affirms that, the work is worthy, admirable and valuable at personal and social levels.
- It improves the quality of life and makes life purposeful, successful, and happy.
- By work ethics, duties to the self, family, society, and nation are fulfilled.
- Rights of the individuals are respected and nourished.
- Values and virtues are cultivated and enjoyed by all human beings.
- Further, the quality of life is improved and the environment protected.
- On the other hand, unemployment and under-employment lead to frustration, social tensions, and occasional militancy.
- For a developing economy and society, like ours, we need to *promote work ethics*, at all levels, to flourish as developed nation.

- Service learning refers to learning the service policies, procedures, norms, and conditions, other than ‘the technical trade practices’.
- The service learning includes the characteristics of the work, basic requirements, security of the job, and awareness of the procedures, while taking decisions and actions.
- It helps the individuals to interact ethically with colleagues, to effectively coordinate with other departments, to interact cordially with suppliers as well as the customers, and to maintain all these friendly interactions.

- The service learning is a methodology falling under the category of experiential education.
- It is one of the forms of experiential learning and community service opportunities.
- It is distinguished in the following ways:

  1.Connection to curriculum: Integrating the learning into a service project is a key to successful service learning. Academic ties should be clear and built upon existing disciplinary skills.

  2. *Learner's voice*: Beyond being actively engaged in the project, trainees have the opportunity to select, design, implement, and evaluate their service activity.

  3. *Reflection*: Structured opportunities are created to think, talk, and write about the service experience. The balance of reflection and action allows the trainee to be constantly aware of the impact of their *work*.

  4. *Partners in the community*: Partnership with community agencies are used to identify genuine needs, provide mentorship, and contribute input such as labor and expertise towards completing the project.

Civic Virtue

- Virtues are *positive* and *preferred* values.
- Civic virtues are the moral duties and rights, as a citizen of the village or the country or an integral part of the society and environment.
- An individual may exhibit civic virtues by voting, volunteering, and organizing welfare groups and meetings.

The duties are:

- To pay taxes to the local government and state, in time.
- To keep the surroundings clean and green.
- Not to pollute the water, land, and air by following hygiene and proper garbage disposal. For example, not to burn wood, tyres, plastic materials, spit in the open, even not to smoke in the open, and not to cause nuisance to the public, are some of the civic (duties) virtues.
- To follow the road safety rules.

- On the other hand, the rights are:
  - To vote the local or state government.
  - To contest in the elections to the local or state government.
  - To seek a public welfare facility such as a school, hospital or a community hall or transport or communication facility, for the residents.
  - To establish a green and safe environment, pollution free, corruption free, and to follow
  - ethical principles. People are said to have the right to breathe in fresh air, by not allowing smoking in public.
  - People have inalienable right to accept or reject a project in their area. One has the right to seek legal remedy, in this respect, through public interest petition.

Respect for Others

- It is the basic requirement for nurturing friendship, team work, and for the synergy it promotes and sustains.
- The principles enunciated in this regard are:
  - Recognize and accept the existence of other persons as human beings, because they have a right to live, just as you have.
  - Respect others' ideas (decisions), words, and labor (actions).
  - One need not accept or approve or award them, but shall listen to them first. One can correct or warn, if they commit mistakes.
  - Appreciate colleagues and subordinates on their positive actions. Criticize constructively and encourage them.
  - Show 'goodwill' on others. Love others. Allow others to grow.
  - Basically, the goodwill reflects on the originator and multiplies itself on everybody.
  - This will facilitate collinearity, focus, coherence, and strength to achieve the goals.

Living Peacefully

- To live peacefully, one should start install peace within (self).
- Charity begins at home.
- Then one can spread peace to family, organization where one works, and then to the world, including the environment.
- Only who are at peace can spread peace. You can not gift an article which you do not possess.
- The essence of oriental philosophy is that one should not fight for peace. It is oxymoron.

- One should adopt the following means to live peacefully, in the world:

1. Nurture

- Order in one's life (self-regulation, discipline, and duty).
- Pure thoughts in one's soul (loving others, blessing others, friendly, and not criticizing or hurting others by thought, word or deed).
- Creativity in one's head (useful and constructive).
- Beauty in one's heart (love, service, happiness, and peace).

2. Get

- Good health/body (physical strength for service).

3. Act

- Help the needy with head, heart, and hands (charity). Service to the poor is considered holier than the service to God.
- Not hurting and torturing others either physically, verbally, or mentally.

- The following are the factors that promote living, with internal and external peace:
  - Conducive environment (safe, ventilated, illuminated and comfortable).
  - Secured job and motivated with ‘recognition and reward’.
  - Absence of threat or tension by pressure due to limitations of money or time.
  - Absence of unnecessary interference or disturbance, except as guidelines.
  - Healthy labor relations and family situations.
  - Service to the needy (physically and mentally-challenged) with love and sympathy.

Caring and Sharing

- ***Caring***
- Caring is feeling for others.
- It is a process which exhibits the interest in, and support for, the welfare of others with fairness, impartiality and justice in all activities, among the employees, in the context of professional ethics.
- It includes showing respect to the feelings of others, and also respecting and preserving the interests of all others concerned.
- Caring is reflected in activities such as friendship, membership in social clubs and professional societies, and through various transactions in the family, fraternity, community, country and in international councils.
- In the present day context, caring for the environment (including the *fauna and flora*) has become a necessity for our very survival.

- ***Sharing***
- Primarily, caring influences ‘sharing’.
- Sharing is a process that describes the transfer of knowledge (teaching, learning, and information), experience (training), commodities (material possession) and facilities with others.
- The transfer should be genuine, legal, positive, voluntary, and without any expectation in return. However, the proprietary information it should not be shared with outsiders.
- Through this process of sharing, experience, expertise, wisdom and other benefits reach more people faster. Sharing is voluntary and it can not be driven by force, but motivated successfully through ethical principles.
- In short, sharing is ‘charity’
- For the humanity, ‘sharing’ is a *culture*.
- The ‘happiness and wealth’ are multiplied and the ‘crimes and sufferings’ are reduced, by sharing. It paves the way for peace and obviates militancy.
- Philosophically, the sharing maximizes the happiness for all the human beings.
- In terms of psychology, the fear, divide, and distrust between the ‘haves’ and ‘have-nots’ disappear. Sharing not only paves the way to prosperity, early and easily, and sustains it.
- Economically speaking, benefits are maximized as there is no wastage or loss, and everybody gets one’s needs fulfilled and satisfied. Commercially speaking, the profit is maximized.
- Technologically, the productivity and utilization are maximized by sharing.

Honesty

- Honesty is a virtue, and it is exhibited in two aspects namely,
- Truthfulness - is to face the responsibilities upon telling truth.
  - One should keep one's word or promise.
  - By admitting one's mistake committed (one needs courage to do that!), it is easy to fix them.
  - Reliable engineering judgment, maintenance of truth, defending the truth, and communicating the truth, only when it does 'good' to others, are some of the reflections of truthfulness.
- Trustworthiness- is maintaining integrity and taking responsibility for personal performance.
  - People abide by law and live by mutual trust.
  - They play the right way to win, according to the laws or rules (legally and morally).
  - They build trust through reliability and authenticity.
  - They admit their own mistakes and confront unethical actions in others and take tough and principled stand, even if unpopular.

- Honesty is mirrored in many ways:
  - (*a*) Beliefs (intellectual honesty).
  - (*b*) Communication (writing and speech).
  - (*c*) Decisions (ideas, discretion).
  - (*d*) Actions (means, timing, place, and the goals). and
  - (*e*) Intended and unintended results achieved.
- As against this, some of the actions of an engineer that leads to dishonesty are:
  - 1. *Lying*
  - 2. *Deliberate deception*
  - 3. *Withholding the information*
  - 4. *Not seeking the truth*
  - 5. *Not maintaining confidentiality*
  - 6. Giving professional judgment

Courage

- Courage is the tendency to accept and face risks and difficult tasks in rational ways.
- Self-confidence is the basic requirement to nurture courage.
- Courage is classified into three types, based on the types of risks, namely
- (*a*) Physical courage-In physical courage, the thrust is on the adequacy of the physical strength, including the muscle power and armaments.
- (*b*) Social courage-The social courage involves the decisions and actions to change the order, based on the conviction for or against certain social behaviors. This requires leadership abilities, including empathy and sacrifice, to mobilize and motivate the followers, for the social cause.
- (*c*) Intellectual courage-The intellectual courage is inculcated in people through acquired knowledge, experience, games, tactics, education, and training. In professional ethics, courage is applicable to the employers, employees, public, and the press.

The courageous people own and have shown the following characteristics, in their professions:

- (*a*) Perseverance (sustained hard work),
- (*b*) Experimentation (preparedness to face the challenges, that is, unexpected or unintended results),
- (*c*) Involvement (attitude, clear and firm resolve to act), and
- (*d*) Commitment (willing to get into action and to reach the desired goals by any alternative but ethical means).

Cooperation

- Commitment is a team-spirit present with every individual engaged in engineering.
- Co-operation is activity between two persons or sectors that aims at integration of operations (synergy), while not sacrificing the autonomy of either party.
- Further, working together ensures, coherence, i.e., blending of different skills required, towards common goals.
- The impediments to successful cooperation are:
  - 1. Clash of ego of individuals.
  - 2. Lack of leadership and motivation.
  - 3. Conflicts of interests, based on region, religion, language, and caste.
  - 4. Ignorance and lack of interest.

- By careful planning, motivation, leadership, fostering and rewarding team work, professionalism and humanism beyond the 'divides', training on appreciation to different cultures, mutual understanding 'cooperation' can be developed and also sustained.

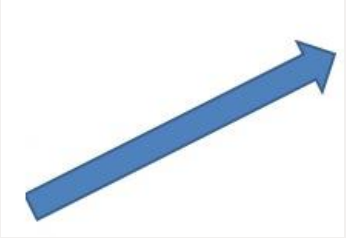
Commitment

- Commitment means *alignment to goals and adherence to ethical principles during the activities*.
- First of all, one must believe in one's action performed and the expected end results (confidence).
- It means one should have the conviction without an iota of doubt that one will succeed.
- Holding sustained interest and firmness, in whatever ethical means one follows, with the fervent attitude and hope that one will achieve the goals, is commitment.
- It is the driving force to realize success.
- This is a basic requirement for any profession.

Empathy

- Empathy is social radar. Sensing what others feel about, without their open talk, is the essence of empathy.
- Empathy begins with showing concern, and then obtaining and understanding the feelings of others, from others' point of view.
- To practice 'Empathy', a leader must have or develop in him, the following characteristics
  - 1. *Understanding others*
  - 2. *Service orientation*
  - 3. *Developing others*
  - 4. *Leveraging diversity* (opportunities through diverse people)
- The benefits of empathy include:
  - 1. Good customer relations (in sales and service, in partnering).
  - 2. Harmonious labor relations (in manufacturing).
  - 3. Good vendor-producer relationship (in partnering.)

Self-confidence



- Certainty in one's own capabilities, values, and goals, is self-confidence.
- These people are usually positive thinking, flexible and willing to change.

They respect others so much as they respect themselves.

The self-confidence in a person develops a sense of partnership, respect, and accountability, and this helps the organization to obtain maximum ideas, efforts, and guidelines from its employees.

- The people with self-confidence have the following characteristics:
  - 1. A self-assured standing,
  - 2. Willing to listen to learn from others and adopt(flexibility),
  - 3. Frank to speak the truth, and
  - 4. respect others' efforts and give due credit.

The factors that shape self-confidence in a person are:

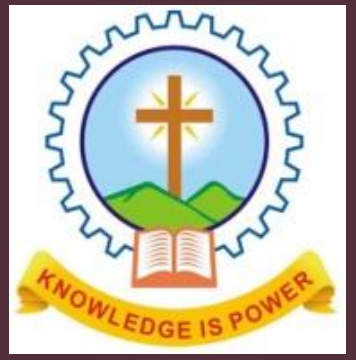
- 1. Heredity (attitudes of parents) and family environment (elders),
- 2. Friendship (influence of friends/colleagues),
- 3. Influence of superiors/role models, and
- 4. Training in the organization

The following methodologies are effective in developing self-confidence in a person:

- 1. Encouraging SWOT analysis. By evaluating their strength and weakness, they can anticipate and be prepared to face the results.
- 2. Training to evaluate risks and face them (self-acceptance).
- 3. Self-talk . It is conditioning the mind for preparing the self to act, without any doubt on his capabilities. This make one accepts himself while still striving for improvement.
- 4. Study and group discussion, on the history of leaders and innovators.

MODULE 2

ENGINEERING ETHICS & PROFESSIONALISM



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Engineering Ethics

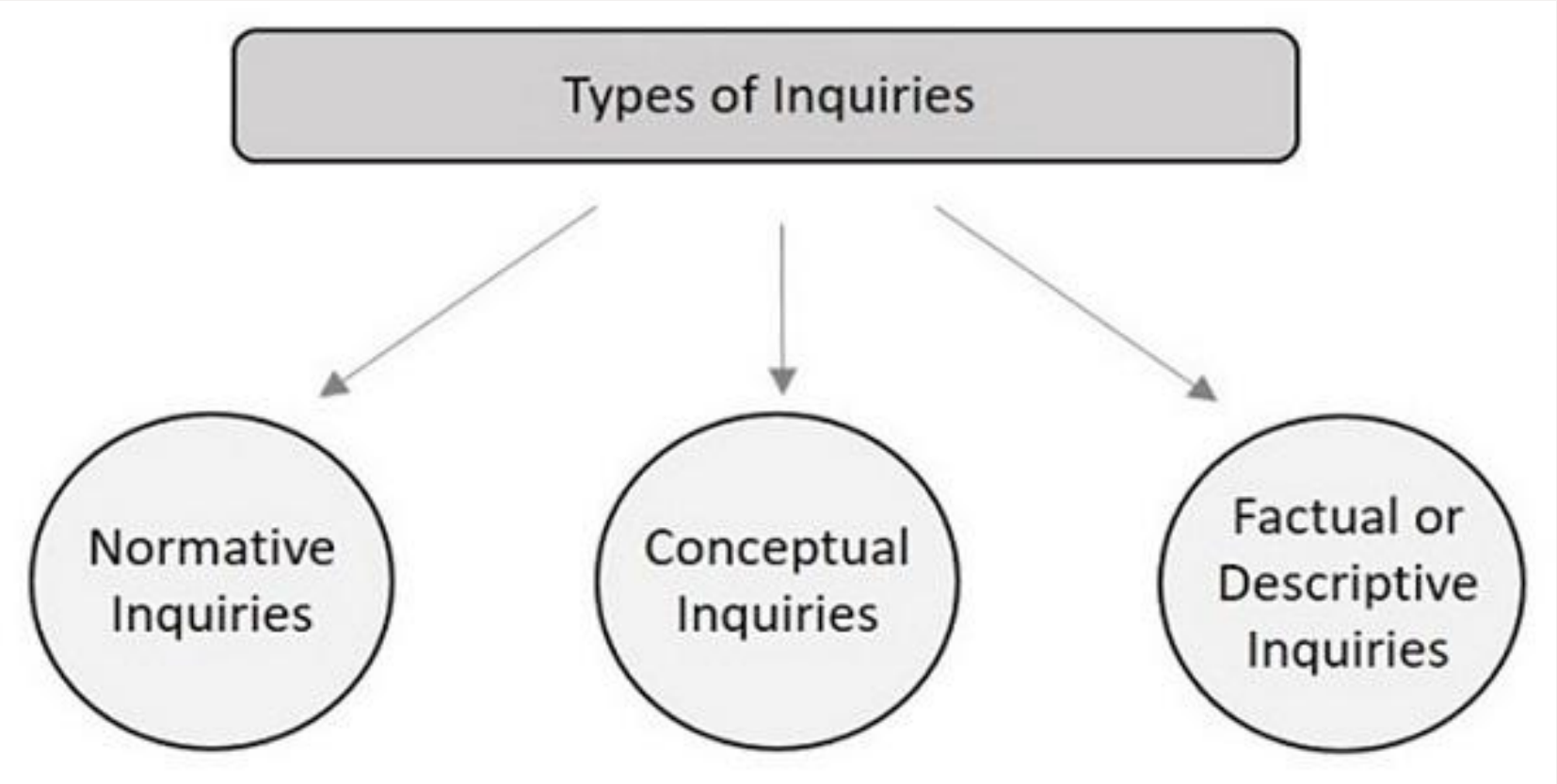
- Engineering Ethics is the activity and discipline aimed at
  - understanding the moral values that ought to guide engineering profession or practice,
  - resolving moral issues in engineering, and
  - justifying the moral judgments in engineering.
  - It deals with set of moral problems and issues connected with engineering.
- Engineering ethics is defined by the codes and standards of conduct endorsed by engineering (professional) societies with respect to the particular set of beliefs, attitudes and habits displayed by the individual or group.
- Another important goal of engineering ethics is the discovery of the set of justified moral principles of obligation, rights and ideals that ought to be endorsed by the engineers and apply them to concrete situations.
- Engineering is the largest profession and the decisions and actions of engineers affect all of us in almost all areas of our lives, namely public safety, health, and welfare.

Senses of Engineering Ethics

- There are two different senses (meanings) of engineering ethics, namely the **Normative and the Descriptive senses.**
- The normative sense include:
  - (a) Knowing moral values, finding accurate solutions to moral problems and justifying moral judgments in engineering practices,
  - (b) Study of decisions, policies, and values that are morally desirable in the engineering practice and research, and
  - (c) Using codes of ethics and standards and applying them in their transactions by engineers.
- The descriptive sense refers to what specific individual or group of engineers believe and act, without justifying their beliefs or actions.

Types of inquiry

- The three types of inquiries, in solving ethical problems are:



1. Normative Inquiry

- It seeks to identify and justify the morally-desirable norms or standards that should guide individuals and groups.
- It also has the theoretical goal of justifying particular moral judgments.
- Normative questions are about what ought to be and what is good, based on moral values.

For example,

1. How far does the obligation of engineers to protect public safety extend in any given situation?

2. When, if ever, should engineers be expected to blow whistle on dangerous practices of their employers?

2. Conceptual Inquiry

- It is directed to clarify the meaning of concepts or ideas or principles that are expressed by words or by questions and statements. For example,
  - (*a*) What is meant by safety?
  - (*b*) How is it related to risk?
  - (c) What is a bribe?
  - (*d*) What is a profession?
- When moral concepts are discussed, normative and conceptual issues are closely interconnected

3. Factual or Descriptive inquiry.

- It is aimed to obtain facts needed for understanding and resolving value issues. Researchers conduct factual inquiries using mathematical or statistical techniques. The inquiry provide important information on business realities, engineering practice, and the effectiveness of professional societies in fostering moral conduct, the procedures used in risk assessment, and psychological profiles of engineers. The facts provide not only the reasons for moral problems but also enable us to develop alterative ways of resolving moral problems.
- For example,
  - 1. How were the benefits assessed?
  - 2. What are procedures followed in risk assessment?
  - 3. What are short-term and long-term effects of drinking water being polluted? and
  - 4. Who conducted the tests on materials?

Variety of moral issues:

- It would be relevant to know why and how do moral issues (problems) arise in a profession or why do people behave unethically?
- The reasons for people including the employer and employees, behaving unethically may be classified into three categories:

1. Resource Crunch

  - Due to pressure, through time limits, availability of money or budgetary constraints, and technology decay or obsolescence.
  - Pressure from the government to complete the project in time (e.g., before the elections), reduction in the budget because of sudden war or natural calamity (e.g., Tsunami) and obsolescence due technology innovation by the competitor lead to manipulation and unsafe and unethical execution of projects.
  - Involving individuals in the development of goals and values and developing policies that allow for individual diversity, dissent, and input to decision-making will prevent unethical results.

2. Opportunity

- (*a*) Double standards or behavior of the employers towards the employees and the public.
- (*b*) Management projecting their own interests more than that of their employees. Some organizations over-emphasize short-term gains and results at the expense of themselves and others,
- (*c*) Emphasis on results and gains at the expense of the employees, and
- (*d*) Management by objectives, without focus on empowerment and improvement of the infrastructure.

- This is best encountered by developing policies that allow 'conscience keepers' and whistle blowers and appointing a person who can work confidentially with people to solve the unethical problems internally.

3. Attitude

- Poor attitude of the employees set in due to
  - (*a*) Low morale of the employees because of dissatisfaction and downsizing,
  - (*b*) Absence of grievance redressal mechanism,
  - (*c*) Lack of promotion or career development policies or denied promotions,
  - (*d*) Lack of transparency,
  - (*e*) Absence of recognition and reward system, and
  - (*f*) Poor working environments.
- Giving ethics training for all, recognizing ethical conduct in work place, including ethics in performance appraisal, and encouraging open discussion on ethical issues, are some of the directions to promote positive attitudes among the employees.
- To get firm and positive effect, ethical standards must be set and adopted by the senior management, with input from all personnel.

Moral dilemmas

- Dilemmas are situations in which moral reasons come into conflict, or in which the application of moral values are problems, and one is not clear of the immediate choice or solution of the problems.
- Moral reasons could be rights, duties, goods or obligations. These situations do not mean that things had gone wrong, but they only indicate the presence of moral complexity.
- This makes the decision making complex. For example, a person promised to meet a friend and dine, but he has to help his uncle who is involved in an accident — one has to fix the priority.
- There are some difficulties in arriving at the solution to the problems, in dilemma.
- The three complex situations leading to moral dilemmas are:
  - 1. The problem of *vagueness*: One is unable to distinguish between good and bad (right or wrong) principle.
  - 2. The problem of *conflicting reasons*: One is unable to choose between two good moral solutions.
  - 3. The problem of *disagreement*: There may be two or more solutions and none of them mandatory. These solutions may be better or worse in some respects but not in all aspects. One has to interpret, apply different morally reasons, and analyze and rank the decisions.

Steps to Solve Dilemma

The logical steps in confronting moral dilemma are:

- 1. Identification of the moral factors and reasons. The clarity to identify the relevant moral values from among duties, rights, goods and obligations is obtained (conceptual inquiry). The most useful resource in identifying dilemmas in engineering is the professional codes of ethics, as interpreted by the professional experience. Another resource is talking with colleagues who can focus or narrow down the choice of values.
- 2. Collection of all information, data, and facts (factual inquiry) relevant to the situation.
- 3. Rank the moral options i.e., priority in application through value system, and also as obligatory, all right, acceptable, not acceptable, damaging, and most damaging etc. For example, in fulfilling responsibility, the codes give prime importance to public safety and protection of the environment, as compared to the individuals or the employers (conceptual inquiry).
- 4. Generate alternate courses of action to resolve the dilemma. Write down the main options and sub-options as a matrix or decision tree to ensure that all options are included.
- 5. Discuss with colleagues and obtain their perspectives, priorities, and suggestions on various alternatives.
- 6. Decide upon a final course of action, based on priority fixed or assumed. If there is no ideal solution, we arrive at a partially satisfactory or 'satisficing' solution.

Moral Autonomy

- Moral autonomy is defined as, decisions and actions exercised on the basis of moral concern for other people and recognition of good moral reasons.
- Alternatively, moral autonomy means 'self determinant or independent'.
- The autonomous people hold moral beliefs and attitudes based on their critical reflection rather than on passive adoption of the conventions of the society or profession.
- Moral autonomy may also be defined as a skill and habit of thinking rationally about the ethical issues, on the basis of moral concern.

- The engineering skills related to moral autonomy are listed as follows:

1. Proficiency in recognizing moral problems in engineering and ability to distinguish as well as relate them to problems in law, economics, and religion,

2. Skill in comprehending, clarifying, and critically-assessing arguments on different aspects of moral issues,

3. Ability to form consistent and comprehensive view points based on facts,

4. Awareness of alternate responses to the issues and creative solutions for practical difficulties,

5. Sensitivity to genuine difficulties and subtleties, including willingness to undergo and tolerate some uncertainty while making decisions,

6. Using rational dialogue in resolving moral conflicts and developing tolerance of different perspectives among morally reasonable people, and

7. Maintaining moral integrity.

Kohlberg's Theory of Moral Development

Gilligan's Stages of the Ethic of Care

Levels and Characteristics (*)

Level 1: Orientation to Individual Survival
*individual survival

First Transition: Selfishness to Responsibility
*connection and responsibility to others

Level 2: Goodness as Self-Sacrifice
*reliance on others, social acceptance

Second Transition: Goodness to Truth
*questioning comparative value of self vs. others

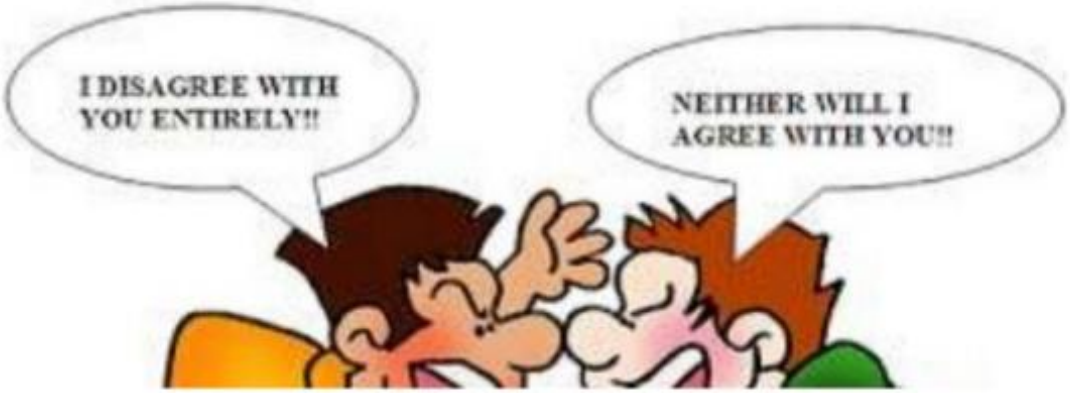
Level 3: Morality of Nonviolence
*heightened understanding of choice between own needs and care for others; do not harm others or self

MORAL DEVELOPMENT (THEORIES)

Kohlberg's Theory	*Carol Gilligan's Theory*
A. Basic Aspects	
1. Is based on the study on men.	1. Is based on the study on men and women
2. Men give importance to moral rule.	2. Women always want to keep up the personal relationships with all the persons involved in the situations.
3. Ethics of rules and rights.	3. Women give attention to circumstances leading to critical situations rather than rules: (context-oriented and ethics of care)
B Characteristic Features	
1. Justice	1. Reason
2. Factual	2. Emotional
3. Right or wrong	3. Impact on relationships
4. Logic only	4. Compassion too
5. Logic and rule-based	5. Caring and concern
6. Less of caring	6. More of caring
7. Matter of fact (practical)	7. Abstract
8. Present focus	8. Future focus
9. Strict rules	9. Making exceptions
10. Independence	10. Dependence
11. Rigid	11. Human-oriented
12. Taking a commanding role	12. Shying away from decision-making
13. Transactional approach	13. Transformational approach

Consensus and Controversy

- Consensus means „agreement" and „controversy" means disagreement.
- The consensus and the controversies are playing the vital roles while considering the moral autonomy.
- When an individual exercises the moral autonomy, he cannot get the same results as others get in applying moral autonomy.
- Surely there must be some moral differences i.e. the results or verdicts will be of controversy.
- This kind of disagreements is unavoidable. These disagreements require some tolerances among individuals those who are autonomous, reasonable and responsible.



Profession and Professionalism

- Profession means a job or an occupation, that helps a person earn his living. The main criteria of a profession involves the following.
  - **Advanced expertise**
  - **Self-regulation**
  - **Public good**
- A person who is paid for getting involved in a particular profession in order to earn a living as well as to satisfy the laws of that profession can be understood as a Professional.
- 'Professionalism' is defined as the personally held beliefs of a Professional about their own conduct as a member of a Profession. It is often linked to the upholding of the principles, laws, ethics and conventions of a Profession in the form of a code of practice.

Models of professional roles

- Promotion of public good is the primary concern of the professional engineers. There are several role models to whom the engineers are attracted. These models provoke their thinking, attitudes and actions.
- **1. Savior**

The engineer as a savior, save the society from poverty, illiteracy, wastage, inefficiency, ill health, human (labor) dignity and lead it to prosperity, through technological development and social planning. For example, R.L. Stevenson.

- **2. Guardian**

He guards the interests of the poor and general public. As one who is conversant with technology development, is given the authority befitting his expertise to determine what is best suited to the society. For example, Lawrence of Arabia (an engineer).

- **3. Bureaucratic Servant**

He serves the organization and the employers. The management of an enterprise fixes its goals and assigns the job of problem solving to the engineer, who accepts the challenge and shapes them into concrete achievements. For example, Jamshedji Tata.

- **4. Social Servant**

It is one who exhibits social responsibility. The engineer translates the interest and aspirations of the society into a reality, remembering that his true master is the society at large. For example, Sir M.Viswesvarayya.

- **5. Social Enabler and Catalyst**

One who changes the society through technology. The engineer must assist the management and the society to understand their needs and make informed decisions on the desirable technological development and minimize the negative effects of technology on people and their living environment. Thus, he shines as a social enabler and a catalyst for further growth. For example, Sri Sundarlal Bahuguna.

- **6. Game Player**

He is neither a servant nor master. An engineer is an assertive player, not a passive player who may carry out his master's voice. He plays a unique role successfully within the organization, enjoying the excitement of the profession and having the satisfaction of surging ahead in a competitive world. For example, Narayanamurthy, Infosys and Dr. Kasthurirangan, ISRO.

Theories about right action (ETHICAL THEORIES)

- Theories and judgments are continually adjusted to each other until we reach a reflective equilibrium.
- Most of the theories converge towards the welfare of the humanity.
- The duty ethics and right ethics differ in great extent on their emphasis. But they remain complementary always .
- Several ethical theories have been developed over different times, each of them stressing certain ethical principles or features.
- Each stresses a view and many a times, we find that these theories converge and reinforce the ethics, in deciding upon the actions and justifying the results.

1. Utilitarian Theory

- The term Utilitarianism was conceived in the 19th century by **Jeremy Bentham** and **John Stuart Mill** to help legislators determine which laws were morally best.
- They suggested that the standard of right conduct is maximization of good consequences.
- Good consequences mean either 'utilities' or the 'balance of good over evil'.
- This approach weighs the costs and benefits. Right actions are the ones that produce the greatest satisfaction of the preferences of the affected persons.

2. Duty Ethics

- The duty ethics theory, proposed by **Immanuel Kant** (1724-1804) states, that actions are consequences of performance of one's duties such as, 'being honest', 'not cause suffering of others', 'being fair to others including the meek and week', 'being grateful', 'keeping promises' etc.

3. Rights Theory

- Rights are entitlement to act or to have another individual act in a certain way.
- Minimally, rights serve as a protective barrier, shielding individuals from unjustified infringement of their moral agency by others.
- For every right, we have a corresponding duty of noninterference.

4. The Virtue Theory

- This emphasizes on the character rather than the rights or duties. The character is the pattern of virtues (morally-desirable features).
- The theory advocated by Aristotle, stressed on the tendency to act at proper balance between extremes of conduct, emotion, desire, attitudes to find the golden mean between the extremes of 'excess' or 'deficiency'.

5. Self-realisation Ethics

- Right action consists in seeking self-fulfillment. In one version of this theory, the self to be realized is defined by caring relationships with other individuals and society.
- In another version called *ethical egoism*, the right action consists in always promoting what is good for oneself.
- No caring and society relationships are assumed.

6. Justice (Fairness) Theory

- Issues create controversies simply because we do not bother to check the fairness or justice.
- Favoritism gives benefits to some people without a justifiable reason for singling them out; discrimination imposes burdens on people who are no different from those on whom burdens are not imposed.
- Both favoritism and discrimination are unjust and wrong.

Self interest

- Self-interest is being good and acceptable to oneself.
- It is pursuing what is good for oneself.
- It is very ethical to possess self-interest.
- As per utilitarian theory, this interest should provide for the respect of others also.
- Duty ethics recognizes this aspect as duties to ourselves. Then only one can help others.
- Right ethicist stresses our rights to pursue our own good.
- Virtue ethics also accepts the importance of self-respect as link to social practices.

Customs

Ethical Pluralism:

- Various cultures in our pluralistic society lead to tolerance for various customs, beliefs, and outlooks. Accordingly ethical pluralism also exists.
- Although many moral attitudes appear to be reasonable, the rational and morally concerned people can not fully accept any one of the moral perspectives.
- There are many varied moral values, which allow variation in the understanding and application of values by the individuals or groups in their everyday transactions.
- It means that even reasonable people will not agree on all moral issues and professional ethics.

Ethical Relativism:

- According to this principle, actions are considered morally right when approved by law or custom, and wrong when they violate the laws or customs.
- The deciding factor is the law or the customs of the society.

Religion

- Religions have played major roles in shaping moral views and moral values, over geographical regions.
- Further, there is a strong psychological link between the moral and religious beliefs of people following various religions and faiths.
- Religions support moral responsibility. They have set high moral standards.
- Faith in the religions provides trust and this trust inspires people to be moral. The religions insist on tolerance and moral concern for others.
- Many professionals who possess religious beliefs are motivated to be morally responsible.
- Each religion lays stress on certain high moral standards.

Uses of Ethical Theories

The ethical theories are useful in many respects.

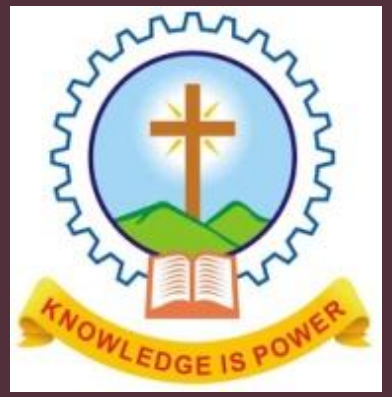
- 1. In understanding moral dilemma. They provide clarity, consistency, systematic and comprehensive understanding.
- 2. It provides helpful practical guidance in moral issues towards the solution.
- 3. Justifying professional obligations and decisions, and
- 3. In relating ordinary and professional morality.

Different criteria may be applied for evaluating various ethical theories and deciding upon the best.

- 1. The theory must be clear and (coherent) formulated with concepts that are logically connected.
- 2. It must be internally consistent, i.e., none of its principles conflicts with any other
- 3. The theory and its defense must depend, only upon facts.
- 4. It must organize basic moral values in systematic and comprehensive manner. It is to fix priority of values and provide guidance in all situations
- 5. It must provide guidance compatible with our moral convictions (judgments) about concrete situations. For example, if an ethical theory says that it is all right for engineers to make explosive devices without the informed consent of the public, we can conclude that the theory is inadequate

MODULE 3

ENGINEERING AS SOCIAL EXPERIMENTATION.



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Engineering as Experimentation

- Experimentation plays an important role in the process of designing the product.
- When it is decided to change a new engineering concept into its first rough design, preliminary tests or simulation should be conducted.
- Using formal experimental methods, the materials and methods of designing are tried out.
- These tests may be based on more detailed designs.
- The test for designing should be evolved till the final product produced.
- With the help of feedback of several tests, further modification can be made if necessary.
- Beyond these tests and experiments, each engineering project has to be viewed as an experiment.

Engineering Projects VS. Standard Experiments

- ***A. Similarities***
  - *Partial ignorance*
  - *Uncertainty*
  - *Continuous monitoring*
  - *Learning from the past*
- ***B. Contrasts***
  - *Experimental control*
  - *Humane touch*
  - *Informed consent*
  - *Knowledge gained*

Engineers as responsible Experimenters

- Although the engineers facilitate experiments, they are not alone in the field.
- Their responsibility is shared with the organizations, people, government, and others.
- No doubt the engineers share a greater responsibility while monitoring the projects, identifying the risks, and informing the clients and the public with facts.
- Based on this, they can take decisions to participate or protest or promote.
- The engineer, as an experimenter, owe several responsibilities to the society, namely,
  - 1. A conscientious commitment to live by moral values.
  - 2. A comprehensive perspective on relevant information. It includes constant awareness of the
  - progress of the experiment and readiness to monitor the side effects, if any.
  - 3. Unrestricted free-personal involvement in all steps of the project/product development
  - (autonomy).
  - 4. Be accountable for the results of the project (accountability).

Codes of Ethics

- The 'codes of ethics' exhibit, rights, duties, and obligations of the members of a profession and a professional society. The codes exhibit the following essential roles:
  - 1. *Inspiration and guidance*.
  - 2. *Support to engineers*.
  - 3. *Deterrence (discourage to act immorally)* and discipline (regulate to act morally).
  - 4. *Education and mutual understanding*.
  - 5. *Create good public image.*
  - 6. *Protect the status quo*.
  - 7. *Promotes business interests*.

Limitations:

- The codes are not remedy for all evils. They have many limitations, namely:
- 1. General and vague wordings. Many statements are general in nature and hence unable to solve all problems.
- 2. Not applicable to all situations. Codes are not sacred, and need not be accepted without criticism. Tolerance for criticisms of the codes themselves should be allowed.
- 3. Often have internal conflicts. Many times, the priorities are clearly spelt out, e.g., codes forbid public remarks critical of colleagues (engineers), but they actually discovered a major bribery, which might have caused a huge loss to the exchequer.
- 4. They can not be treated as final moral authority for professional conduct. Codes have flaws by commission and omission. There are still some grey areas undefined by codes. They can not be equated to laws. After all, even laws have loopholes and they invoke creativity in the legal practitioners.
- 5. Only a few enroll as members in professional society and non-members can not be compelled.
- 6. Even as members of the professional society, many are unaware of the codes
- 7. Different societies have different codes. The codes can not be uniform or same! Unifying the codes may not necessarily solve the problems prevailing various professions, but attempts are still made towards this unified codes.
- 8. Codes are said to be coercive. They are sometimes claimed to be threatening and forceful.

Plagiarism

- Plagiarism is presenting someone else's work or ideas as your own, with or without their consent, by incorporating it into your work without full acknowledgement.
- All published and unpublished material, whether in manuscript, printed or electronic form, is covered under this definition. Plagiarism may be intentional or reckless, or unintentional.
- Under the regulations for examinations, intentional or reckless plagiarism is a disciplinary offence

FORMS OF PLAGARISM

- **Verbatim (word for word) quotation without clear acknowledgement**
  Cutting and pasting from the Internet without clear acknowledgement
  Information
- **Paraphrasing**
- **Inaccurate citation**
- **Failure to acknowledge assistance**
- **Use of material written by professional agencies or other persons**
- **Auto-plagiarism**

A balanced outlook on law

- 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.

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.

2. The United States Steamboat Code: [1852 A.D]

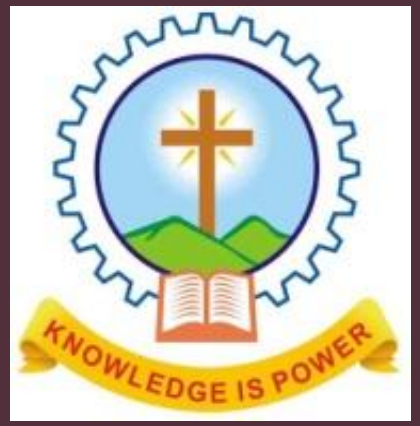
- Steam engines in the past were very large and heavy. James Watt, Oliver Evans and Richard Trevethik modified the old steam engines by removing condensers and made them compact. Beyond careful calculations and guidelines, explosions of boiler happened on steam boats, because of the high speed of the boats.
- The safety valves were unable to keep steam pressure up causing explosion. During that period in 18 th century, more than 2500 people were killed and 2000 people were injured because of the explosion of boilers in steam boats.
- Due to this, the ruling congress in USA passed a law which provided for inspection of the safety aspects of ships and their boilers and engines. But his law turned out to be ineffective due to the corruptions of the inspectors and also their inadequate training regarding the safety checking.
- Then Alfred Guthiro, an engineer of Illinoise had inspected about 200 steam boats on his own cost and found out the reasons for the boiler explosions and made a report.
- His recommendations were published by a Senator Shields of Illinoise and incorporated in senate documents.
- With the help of this, another law was passed. Now it is in the hands of the American Society of Mechanical Engineers who formulated the standards for producing steam boats.

Challenges case study- Bhopal gas tragedy

- ASSIGNMENT

MODULE 4

RIGHTS AND RESPONSIBILITIES



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Collegiality

- Collegiality is the term that describes a work environment where responsibility and authority are shared among the colleagues.
- When Engineering codes of ethics mention collegiality, they generally cite acts that constitute disloyalty.
- The disloyalty of professionals towards an organization, reflects the attitude they have towards the work environment for the salaries they are paid and the trust the company has for them.
- The National Society of Professional Engineers (**NSPE**) Code, for example, states that "Engineers shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice or employment of other engineers.
- Engineers who believe others are guilty of unethical or illegal practice shall present such information to the proper authority for action".
- The main factors that help in maintain harmony among members at a workplace are –
  - Respect- the colleagues are to be respected for their work and contribution towards the organizational goals and should be valued for their professional expertise and their dedication towards the social goods promoted by the profession.
  - Commitment-observed in the sense of sharing a devotion to the moral ideals inherent in one's profession.
  - ~~Connectedness- The coordination~~ among all the members at a workplace or the awareness of participating in cooperative projects based on shared commitments and mutual support, also encourages the quality of the work.

loyalty

Agency-Loyalty:

- Fulfill one's contractual duties to an employer.
- Duties are particular tasks for which one is paid
- Co-operating with colleagues
- Following legitimate authority within the organization.

Identification-Loyalty:

- It has to do with attitudes, emotions and a sense of personal identity.
- Seeks to meet one's moral duties with personal attachment and affirmation.
- It is against detesting their employers and companies, and do work reluctantly and horribly (this is construed as disloyalty)

Managing conflict

- Conflict is not a strange thing for people.
- Human beings experience it in their day-to-day lives – with their friends, families, and more so their professional lives.
- In the workplace, conflict causes a massive degree of frustration, pain, discomfort, sadness, as well as anger. It is a normal life aspect.
- In a working environment where people have disparate outlooks toward the same problems, disagreements are bound to happen.

Steps to manage conflict:

- **1. Clarify what is the source of conflict**
  - The first step in resolving conflict is clarifying its source. Defining the cause of the conflict will enable you to understand how the issue came to grow in the first place.
- **2. Find a safe and private place to talk**
  - Many people often wonder and ask, "What is an approach to solving problems peacefully?" To have a constructive conversation, you need to find an environment that is safe for you to talk to. Such a place also enables you to take the necessary risks for honest communication regarding the issues at hand.
- **3. Listen actively and let everyone have their say**
  - After getting both parties to meet in a secure and private place, let each of them have the opportunity to air out their views and perceptions regarding the issue at hand. Maybe your colleagues still study in college and can't manage their work time.
- **4. Investigate the situation**
  - After listening to the concerns of both parties, take time, and investigate the case. Do not prejudge or come up with a final verdict on the basis of what you have. Dig deeper and find out more about the happenings, involved parties, the issues, and how people are feeling.

Contd…..

- **5. Determine ways to meet the common goal**
  - When managing conflict processes, you need to have a common objective, which is resolving the issue and ensuring it does not resurface. And to solve any problem, you need to be aware of the different stages of conflict. This will enable you to look for the ideal ways to meet the common goal.
- **6. Agree on the best solution and determine the responsibilities each party has in the resolution**
  - Managing and resolving conflict leaps model of communication. Employees will find it easy to interact with another as they understand that they have one goal, which is meeting the company's objectives. So, after investigating the situation and determine ways through which you can resolve the issue, both parties need to develop a conclusion on the best solution for the problem.
- **7. Evaluate how things are going and decide preventative strategies for the future**
  - Never presume that the issue is resolute. Effective communication ought to dominate in the business. So, ask yourself, "What is the second step of effective communication?"

Respect for authority

- In order to meet the organizational goals, the professionals should possess respect for authority.
- The levels of authority maintained by the organization provides a means for identifying areas of personal responsibility and accountability.
- Following are the major types of authority –
  - **Executive Authority –** The corporate or institutional right given to a person to exercise power based on the resources of an organization.
  - **Expert Authority –** This is the possession of special knowledge, skill or competence to perform a particular task or to give sound advice.
- According to the goals of the company, the hierarchical authority is distributed.
- A service oriented or engineer-oriented company concentrates on the quality of the products which are decided by the engineers as they are the subject matter experts.
- Whereas a company when it is customer-oriented company, focuses primarily on the satisfaction of the customers. Hence the goal of the company decides the power between a General Manager and a Technical Manager or an Engineer.

Collective bargaining

- It is the responsibility of an organization to look into the welfare of the section of people working in it. Their issues need to be discussed.
- When we discuss issues, there can be issues which need to be discussed among the employees themselves and resolutions can be found for the same.
- However, there can be issues which might require the intervention of the management.
- In order to deal with such complex situations, an Employee Union is formed wherein, each employee becomes a member and a leader is elected to represent the group whenever needed.
- At the time of conflicts or arguments, there will arise the need for negotiation between the parties.
- Conflicting situations which call for negotiation might occur on areas related to pay scales, working hours, training, health and safety, overtime, grievance mechanisms, rights in work places or company affairs, etc.
- The process of voluntary negotiations between the employers and a group of employees to resolve the conflicts is called **Collective Bargaining**.
- The parties often refer to the result of the negotiation as a **Collective Bargaining Agreement (CBA)** or as a **Collective Employment Agreement (CEA)**.

Types of Collective Bargaining

There are four main types of collective bargaining –

- **Distributive Bargaining** – In this, one party's gain is another party's loss. **Example** – Wages
- **Integrative bargaining** – In this, both the parties may gain or none of the parties may face a loss. **Example** – Better training programs
- **Attitudinal Structuring** – When there is backlog of bitterness between both the parties then attitudinal structuring is required to make smooth industrial relations.
- **Intra-organizational Bargaining** – There can be conflicting groups in both management and unions also. So, there is need to achieve consensus in these groups.

Confidentiality

- When the word **confidential** is added to a
  it means that it should not be shared with
- It is mostly a trade secret.
- Maintaining confidentiality and avoiding
  of interest are especially important aspects of teamwork and trustworthiness.
- Confidentiality is that practice which helps **to keep secret** all information deemed desirable to keep secret.
- The maintenance of secrecy refers to the unrevealing of any data concerning the company's business or technical processes that are not already in public knowledge.
- Every company has some knowledge and can identify the individuals and groups that might have access to a particular set of information.
- The members of such groups share the responsibility of maintaining confidentiality.

Conflicts of interest

- A person may have different types of interests.
- Such interests can be pursued according to the will, convenience and the laws prevailing.
- A person working in an organization might have multiple interests related to the job he is doing; if he does some side business which means he might be a competitor or he might work with a competitor, it might pose a problem for the employer.
- Such an employee is usually fired from the organization.
- Thus, we can refine our definition of **conflicts of interest** by saying that they typically arise when the following two conditions are met –
  - The professional is in a relationship or role that requires exercising good judgment on behalf of the interests of an employer or client.
  - The professional has some additional or side interest that could threaten good judgement in serving the interests of the employer or client.

Types of conflicts of interest

1. Actual Conflict of Interest

This refers to the situation where the objectivity is lost in decision making, and the inability to discharge the duty to the employer. It is the result of weaker judgment and service. A Civil Engineer working in the Public Works Department has a financial interest in a contracting company, which has submitted a bid for the construction of a bridge. There may be a variety of outside interests. But the conflict arises when the outside interest influences or threatens the professional judgment in serving the employer or clients.

2. Apparent Conflict of Interest

This is explained in the following example. An engineer is paid based on a per cent of the cost of the design and there is no incentive for him to cut the costs. In this situation, it appears that the engineer makes the design more expensive in order to get larger commission for him. This situation leads to doubting the engineer's interest and ability for professional judgment.

3. Potential Conflict of Interest

There are situations where the interest of an employee extends beyond the current employer and into the interest on one's spouse, relative or friend. The interest changes into intimacy and subsequent non-moral judgments against the interest of the employer and in favor of the outsider or even a potential competitor.

Professional rights

- The rights that engineers have as professionals are called Professional Rights. These professional rights include –
  - The basic right of professional conscience.
  - The right of conscientious refusal.
  - The right of professional recognition.

Right of Professional Conscience

- This is a basic right which explains that the decisions taken while carrying on with the duty, where they are taken in moral and ethical manner, cannot be opposed.
- The right of professional conscience is the moral right to exercise professional judgement in pursuing professional responsibilities.
- It requires autonomous moral judgement in trying to uncover the most morally reasonable courses of action, and the correct courses of action are not always obvious.
- There are two general ways to justify the basic right of professional conscience.
  - The exercise of moral reflection and conscience that justifies professional duties is necessary, with respect to that duty.
  - The general duties to respect persons and rule-utilitarianism would accent the public good of allowing engineers to pursue their professional duties.

Contd….

- **Right of Conscientious Refusal**
- The right of conscientious refusal is the right to refuse to engage in unethical behavior. This can be done solely because it feels unethical to the doer. This action might bring conflicts within the authority-based relationships.
- The two main situations to be considered here are –
  - When it is already stated that certain act is unethical in a widely shared agreement among all the employees.
  - When there occurs disagreement among considerable number of people whether the act is unethical.
- Hence it is understood that engineers and other professionals have a moral right to refuse the unethical acts such as bribery, forging documents, altering test results, lying, padding payrolls or coercing employees into acting by threatening, etc.
- **Right to Recognition**
- An engineer has a right to the recognition of one's work and accomplishments.
- An engineer also has right to speak about the work one does by maintaining confidentiality and can receive external recognition.
- The right for internal recognition which includes patents, promotions, raises etc. along with a fair remuneration, are also a part of it.
- The fulfillment of right to recognition motivates the employee to be a trustful member of the organization, which also benefits the employer.
- This makes the employee morally bound which enhances the ethical nature to be abide by the professional ethics.

IPR(intellectual property rights)

- Intellectual property rights is a legal concept that confers rights to owners and creators of the work, for their intellectual creativity.
- Such rights can be granted for areas related to literature, music, invention etc, which are used in the business practices. In general, the intellectual property law offers exclusionary rights to the creator or inventor against any misappropriation or use of work without his/her prior knowledge.
- Intellectual property law establishes an equilibrium by granting rights for limited duration of time.
- Every nation has framed their own intellectual property laws.
- But on international level it is governed by the World Intellectual Property Organization (WIPO).
- The WIPO convention lays down following list of the activities or work which are covered by the intellectual property rights-
  - Industrial designs
  - Scientific discoveries
  - Protection against unfair competition
  - Literary, artistic and scientific works
  - Inventions in all fields of human endeavor
  - Performances of performing artists, phonograms and broadcasts
  - Trademarks, service marks and commercial names and designations
  - All other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields.

Types of Intellectual Property Rights

Intellectual Property Rights signifies to the bundle of exclusionary rights which can be further categorized into the following heads-

- **Copyright-**one of the form of intellectual property right, offers exclusive rights for protecting the authorship of original & creative work like dramatic, musical and literary in nature. Symbolized as "©", here the term ....
- **Patent-** as the exclusionary rights given by the government or the authorized authority to its inventor for a particular duration of time, in respect of his invention.
- **Trademark-**symbolized as the â„¢ and ®, is the distinctive sign or indication which is used for signifying some kind of goods or/and services and is distinctively used across the business ....
- **Trade Secrets -**points towards a formula, pattern, any instrument, design which is kept confidential and through which any business or trade can edge over its rival and can enjoy economic gain.

Contd….

- **Utility Model-**The utility model is the intellectual property right for protecting the inventions. It is somehow described as the statutory monopoly which is bestow upon for the fixed duration of time in exchange to the inventor for ….
- **Geographical Indication-** Geographical Indication (GI) signifies to the name or sign, used in reference to the products which are corresponding to the particular geographical area or somewhat related to the origin like town, region or nation.
- **Industrial Design Rights -**Industrial design rights are defined as the part of the intellectual property rights which confers the rights of exclusivity to the visual designs of objects which are generally not popular utilitarian.

assignment

- Write brief note on

- Role of confidentiality in moral integrity(Roll no:1-10)
- Occupational crime(Roll no:11-20)
- Advantages of IPR and Intellectual Property Rights in India (Roll no: 21-30)
- Whistle blowing (Roll no: 31-40)
- Employee rights (Roll no: 41-50)
- IPR Discrimination (Roll no: 51-67)

MODULE 5

GLOBAL ETHICAL ISSUES

MULTINATIONAL CORPORATIONS

Organizations who have established business in more than one country, are called multinational corporation.

The headquarters are in the home country and the business is extended in many host countries.

The Western organizations doing business in the less-economically developed / developing, countries gain the advantage of inexpensive labour, availability of natural resources, conducive-tax atmosphere, and virgin market for the products.

THE TEN INTERNATIONAL RIGHTS ARE:

1. Right of freedom of physical movement of people
2. Right of ownership of properties
3. Freedom from torture
4. Right to fair trial on the products
5. Freedom from discrimination on the basis of race or sex. If such discrimination against women or minorities is prevalent in the host country, the MNC will be compelled to accept. MNCs may opt to quit that country if the human rights violations are severe.

6. Physical security. Use of safety gadgets have to be supplied to the workers even if the laws of the host country do not suggest such measures.

7. Freedom of speech and forming association

8. Right to have a minimum education

9. Right to political participation

10. Right to live and exist (i.e., coexistence). The individual liberty and sanctity of the human life are to be respected by all

Technology Transfer

It is a process of moving technology to a new setting and implementing it there.

It means moving the technology applications from laboratory to the field/factory or from one country to another

This transfer is effected by governments, organizations, universities, and MNCs.

Appropriate Technology

Identification, transfer, and implementation of most suitable technology for a set of new situations, is called appropriate technology.

Factors such as economic, social, and engineering constraints are the causes for the modification of technology.

The term appropriate is value based and it should ensure fulfillment of the human needs and protection of the environment.

MNCS AND MORALITY

1. MNC should respect the basic human rights of the people of the host countries.

2. The activities of the MNC should give economic and transfer technical benefits, and implement welfare measures of the workers of the host countries.

3. The business practices of the multinational organizations should improve and promote morally justified institutions in the host countries.

4. The multinationals must respect the laws and political set up, besides cultures and promote the cultures of the host countries.

5. The multinational organizations should provide a fair remuneration to the employees of the host countries. If the remuneration is high as that of home country, this may create tensions and if it is too low it will lead to exploitation.

6. Multinational institutions should provide necessary safety for the workers when they are engaged in hazardous activities and 'informed consent' should be obtained from them. Adequate compensation should be paid to them for the additional risks undertaken.

ENGINEERS AS MANAGERS

1. Promote an ethical climate, through framing organization policies, responsibilities and by personal attitudes and obligations.

2. Resolving conflicts, by evolving priority, developing mutual understanding, generating various alternative solutions to problems.

3. Social responsibility to stakeholders, customers and employers.

MANAGING CONFLICTS

(a) *Conflicts based on schedules:* This happens because of various levels of execution, priority and limitations of each level.

(b) *Conflicts arising out of fixing the priority to different projects or departments*. This is to be arrived at from the end requirements and it may change from time to time.

(c) *Conflict based on the availability of personnel.*

(d) *Conflict over technical, economic, and time factors such as cost, time, and performance leve*l.

(e) *Conflict arising in administration such as authority, responsibility, accountability, and logistics required.*

(f) *Conflicts of personality, human psychology and ego problems.*

(g) *Conflict over expenditure and its deviations.*

CONFLICTS CAN BE RESOLVED THROUGH THE PRINCIPLES SUCH AS:

1. PEOPLE

Separate people from the problem. It implies that the views of all concerned should be obtained. *The questions such as what, why, and when the error was committed is more important than to know who committed it.* This impersonal approach will lead to not only early solution but also others will be prevented from committing errors.

2. INTERESTS

Focus must be only on interest i.e., the ethical attitudes or motives and not on the positions (i.e., stated views). A supplier may require commission larger than usual prevailing rate for an agricultural product.

3. OPTIONS

Generate various options as solutions to the problem. This helps a manager to try the next best solution should the first one fails. Decision on alternate solutions can be taken more easily and without loss of time.

4. EVALUATION

The evaluation of the results should be based on some specified objectives such as efficiency, quality, and customer satisfaction. More important is that the means, not only the goals, should be ethical.

CONSULTING ENGINEERS

The consulting engineers work in private. They charge fees from the sponsor and they have more freedom to decide on their projects

The consulting engineers have ethical responsibilities different from the salaried engineers. They are:

1. ADVERTISING

The consulting engineers are directly responsible for advertising their services, even if they employ other consultants to assist them. Deceptive advertising such as the following are prohibited:

(a) By white lies. (b) Half-truth, (c) Exaggerated claims.
(d) Making false suggestions. (e) Through vague wordings or slogans.

2. COMPETITIVE BIDDING

It means offering a price, and get something in return for the service offered. The organizations have a pool of engineers. The expertise can be shared and the bidding is made more realistic. But the individual consultants have to develop creative designs and build their reputation steadily and carefully, over a period of time.

3. CONTINGENCY FEE

This is the fee or commission paid to the consultant, when one is successful in saving the expenses for the client. A sense of honesty and fairness is required in fixing this fee. The NSPE Code III 6 (a) says that the engineers shall not propose or accept a commission on a contingent basis where their judgment may be compromised.

4. SAFETY AND CLIENT'S NEEDS

The greater freedom for the consulting engineers in decision making on safety aspects, and difficulties concerning truthfulness are the matters to be given attention. Properly-trained supervision is needed, but may not happen, unless it is provided. Further, the contractor may not understand and/or be willing to modify the original design to serve the clients best.

The NSPE codes on the advertisement by consultants provide some specific regulations. The following are the activities prohibited in advertisement by consultant:

1. The use of statement containing misrepresentation or omission of a necessary fact.

2. Statement intended or likely to create an unjustified expectation.

3. Statement containing prediction of future (probable) success.

4. Statement intended or likely to attract clients, by the use of slogans or sensational language format.

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.

The engineers, who act as expert-witnesses, are likely to abuse their positions in the following manners:

1. HIRED GUNS (an expert brought in to resolve complex legal or financial problems or to lobby for a cause.)
Mostly lawyers hire engineers to serve the interest of their clients.

2. MONEY BIAS
Consultants may be influenced or prejudiced for monitory considerations, gain reputation and make a fortune.

3. EGO BIAS
The assumption that the own side is innocent and the other side is guilty, is responsible for this behaviour.

4. SYMPATHY BIAS
Sympathy for the victim on the opposite side may upset the testimony.

DUTIES

1. The expert-witness is required to exhibit the responsibility of confidentiality just as they do in the consulting roles

2. More important is that as witness they are not required to volunteer evidence favourable to the opponent.

3. They should be objective to discover the truth and communicate them honestly.

4. The stand of the experts depends on the shared understanding created within the society.

5. The experts should earnestly be impartial in identifying and interpreting the observed data, recorded data, and the industrial standards. They should not distort the truth, even under pressure.

ENGINEERS AS ADVISORS IN PLANNING AND POLICY MAKING

The engineers are required to give their view on the future such as in planning, policy-making, which involves the technology.

Various issues and requirements for engineers who act as advisors are:

1. OBJECTIVITY

The engineers should study the cost and benefits of all possible alternative means in objective manner, within the specified conditions and assumptions.

2. STUDY ALL ASPECTS

They have to study the economic viability (effectiveness), technical feasibility (efficiency), operational feasibility (skills) and social acceptability, which include environmental and ethical aspects, before formulating the policy.

3. VALUES

Engineers have to possess the qualities, such as

(a) honesty,

(b) competence (skills and expertise),

(c) diligence (careful and alert)

(d) loyalty in serving the interests of the clients and maintaining confidentiality,

(e) public trust, and respect for the common good, rather than serving only the interests of the clients or the political interests.

4. TECHNICAL COMPLEXITY

The arbitrary, unrealistic, and controversial assumptions made during the future planning that are overlooked or not verified, will lead to moral complexity. The study on future is full of uncertainties than the investigations on the past events.

5. NATIONAL SECURITY

The proposed options should be aimed to strengthen the economy and security of the nation, besides safeguarding the natural resources and the environment from exploitation and degradation.

MORAL LEADERSHIP

Moral leadership is not merely the dominance by a group. It means adopting reasonable means to motivate the groups to achieve morally desirable goals. This leadership presents the engineers with many challenges to their moral principles.

Moral leadership is essentially required for the engineers, because

1. It is leading a group of people towards the achievement of global and objectives.

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.

5. Voluntarism: Another important avenue for providing moral leadership within communities, by the engineers is to promote services without fee or at reduced fees to the needy groups.

6. Community service: This is another platform for the engineers to exhibit their moral leadership. The engineers can help in guiding, organizing, and stimulating the community towards morally- and environmentally-desirable goals.

The Codes of Ethics promote and sustain the ethical environment and assist in achieving the ethical goals in the following manner:

1. It creates an environment in a profession, where ethical behavior is the basic criterion.

2. It guides and reminds the person as to how to act, in any given situation.

3. It provides support to the individual, who is being pressurized or tortured by a superior or employer, to behave unethically.

4. Apart from professional societies, companies and universities have framed their own codes of ethics, based on the individual circumstances and specific mission of the organizations. These codes of conduct help in employees' awareness of ethical issues, establish, and nurture a strong corporate ethical culture.


Thank
you