Module – 2
Engineering Ethics & Professionalism

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Professional Ethics

- **Professional ethics is a set of ethical standards and values a practicing engineer is required to follow.**

- **It sets the standards for professional practice**

- **Today, it is an essential part of professional education because it helps students deal with issues they will face.**

SENSES OF ENGINEERING ETHICS

- **Engineering ethics has also various senses which are related to one another.**

- **2 different senses (meanings) of engineering ethics**

A.) Normative senses   B.) Descriptive senses

Normative sense includes:

- ✓ **Knowing moral values, finding accurate solutions to moral problems and justifying moral judgments in engineering practices,**

- ✓ **Study of decisions, policies, and values that are morally desirable in the engineering practice and research, and**

- ✓ **Using codes of ethics and standards and applying them in their transactions by engineers.**

Descriptive senses includes:

The descriptive sense refers to what specific individual or group of engineers believe an act, without justifying their beliefs or actions.

Ethics v/s Engineering Ethics

Ethics	Engineering Ethics
Ethics is making investigations and knowing about moral values	Engineering ethics aims at knowing moral values related to engineering
Total view on moral issues	How to solve moral issues related to engineering field.
Ethics is used a means of describing the beliefs, attitudes etc.,	Codes and standards which are to be followed by group of engineers

VARIETY OF MORAL ISSUES

- **According to the Oxford dictionary, morality means principles concerning right and wrong or good and bad behavior.**

The word morality is concerned with:

1.) What morally ought or ought not to be given in a situation

2.) What is morally right or wrong in handling a situation

3.) What is morally good or bad about the people, policies, and ideals involved in it?

TYPES OF INQUIRY

- **Inquiry means an investigation.**
- **Engineering ethics also involves investigations into values, meaning and facts.**

Inquiries in the field of Engineering ethics are of three types.

1.) Normative Inquiries

2.) Conceptual Inquiries

3.) Factual or Descriptive Inquiries

Normative Inquiries

- **These inquiries are mostly helpful to identify the values which guide the individuals and groups in taking a decision**

- **Identifying and justifying some norms and standards of morally desirable nature for guiding individuals as well as groups.**

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Conceptual Inquiries

- **These are meant for describing the meaning of concepts, principles, and issues related to Engineering Ethics**

Factual / Descriptive Inquiries

- **These help to provide fact for understanding and finding solutions to value based issues.**

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MORAL DILEMMAS

- **Moral dilemmas are situations in which two or more moral obligations, duties, rights, goods, or ideals come into conflict with each other**

Causes of Moral Dilemmas

- **Problem of vagueness;**

- **Problem of conflicting reasons; and**

- **Problem of disagreement.**

Steps / Procedures in facing moral dilemma

- **Identifying the relevant moral factors and reasons**

- **Collecting all the available facts which are relevant to the moral factors**

- **Ranking the moral considerations or principles on the basis of importance as applicable to the situation**

- **Considering alternative courses of action for resolving the problems**

- **Suggestions and alternative ideas on resolving that dilemma from colleagues, friend etc.,**

- **Arriving at solution by taking into consideration of all important moral factors**

MORAL AUTONOMY

- **Moral Autonomy is the philosophy which is self-governing or self-determining**

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

- **Moral autonomy helps in improving self-determination.**

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Skills required for Moral Autonomy

- **Ability to relate the problems with the problems of law, economics and religious principles**

- **Skill to process, clarify and understand the arguments against the moral issues**

- **Ability to suggest the solutions to moral issues**

- **Must have the imaginative skill to view the problems from all the viewpoints**

- **Tolerance while giving moral judgment**

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Moral Development Theories

KOHLBERG'S THEORY

Lawrence Kohlberg proposed that people progress in moral reasoning based on their ethical behavior.

- He postulated this theory based on the thinking of younger children throughout their growing period as adults.

- He conveyed that younger children make judgment based on the consequences that might occur and the older children make judgment based on their intuitions.

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3 Stages of Kohlberg's Theory

1. Pre-conventional Level

The first level of moral thinking, which is generally found at Elementary school level. The thinker at this stage tends to think and behave based on the direct consequences that might occur

There are two sub-stages in this.

a. Avoid Punishments

b. Self–interest

2. Conventional Level

The second level of moral thinking, which is generally found at the primary and high school level. The thinker at this stage tends to think and behave based on the want to please others.

There are two sub-stages in this.

a. Getting people to like them

b. Maintain functioning in society

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3. Post-Conventional Level

the third level of Moral thinking, which is generally found after the high school level. The thinker at this stage tends to think and behave based on a sense of justice.

There are two sub-stages in this

- **Reject rigidity of laws**
- **Sense of justice**

Gilligan's Theory

- Carol Gilligan opines that **Kohlberg's** theories are biased upon the **male thinking** process

- Men had a tendency to solve problems by applying ethical principles

- she proposed a theory which has the same three stages of Kohlberg but with different stages of moral development.

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Stages of theory

- **Pre-conventional Level**

  A person in this stage cares for oneself to ensure survival.

- **Conventional Level**
  In this stage, the person feels responsible and shows care towards other people.

- **Post-conventional Level**

  This is the stage, where the principle of care for self as well as others, is accepted.

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CONSENSUS AND CONTROVERSY

CONSENSUS

- **This is that state where people come into agreement with the judgment given and will leave the people with a feel that justice has been done**

CONTROVERSY

- **This is that state where the persons involved in an issue are not satisfied by the verdict and might feel that it was decided on partial interests.**

- **This will leave the people with a sense of dissatisfaction that justice was not done, which might lead to another conflict.**

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PROFESSION AND PROFESSIONALISM

Profession

- **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**

Professional

- **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**

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Professionalism

- **The art of Professionalism can be understood as the practice of doing the right thing, not because how one feels but regardless of how one feels**

- **Professionalism covers comprehensively all areas of practice of a particular profession.**

- **It requires skills and responsibilities involved in engineering profession.**

- **Professionalism implies a certain set of attitudes**

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MODELS OF PROFESSIONAL ROLES

(PROFESSIONAL ROLES TO BE PLAYED BY AN ENGINEER)

1. **Engineers as Saviors**
2. **Engineers as Guardians**
3. **Engineers as Bureaucratic Servants**
4. **Engineers as Social Servants**
5. **Engineers as Social Enablers and Catalysts**
6. **Engineers as Game Players**

THEORIES ABOUT RIGHT ACTION
(Ethical Theories)

Types of Ethical Theories: Depending upon the ethics a person is intended to follow, four theories were postulated by four different philosophers

1. Golden Mean Ethics

2. Duty Based Ethics

3. Right Based Ethics

4. Utilitarian Ethics

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The Golden Mean ethical theory

- **This theory was proposed by Aristotle**

- **According to this theory, the solution to a problem is found by analyzing the reason and the logic**

What is Golden Mean?

- **The Golden Mean virtue can be understood as the virtue of reaching a proper balance between extremes in conduct, emotion, desire and attitude**

- **This theory phrased by Aristotle states that virtues are tendencies to find the golden mean between the extremes of too much (excess) and too little (deficiency) with regard to particular aspects of our lives.**

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Rights-based Ethical Theory

✓ **This theory was proposed by John Locke.**

✓ **According to this theory, the solution to a problem is by realizing that every person has a right to live.**

✓ **Live and let live is the philosophy behind this theory. The rights of a person towards life, health, liberty, possession, etc. are taken care of under this theory.**

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Duty-based Ethical Theory

- **The duty-based ethical theory was proposed by Immanuel Kant.**

- **According to this theory, every person has a duty to follow which is accepted universally, with no exceptions.**

- **Kant observed that everyone is bound to follow some moral laws.**

There are four virtues that come under this law

- **Prudence > Every individual has duties which should be done without any exception.**

- **Temperance > The temptations that might lead to the violation of duties and ethics have to be restrained**

- **Fortitude > Sense of having tolerance**

- **Justice > Truth and fairness**

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Utilitarian Ethics

❑   The Utilitarian ethics was proposed by John Stuart.

❑   According to this theory, the happiness or pleasure of a greatest number of people in the society is considered as the greatest good.

There are two main types of Utilitarianism. They are –

1. **Act Utilitarianism > "A particular action is right if it is likely to produce the higher level of good for the most people in a given situation, compared to alternative choices that might be made."**

2. **Rule Utilitarianism > "Right actions are those required by rules that produce the higher level of good for the most people."**

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SELF-INTEREST

- **Self-interest is nothing but one's personal good.**

- **It refers to the goodness of oneself in the long run.**

- **Morality essentially needs a willingness on the part of both individuals and corporations to place some restrictions on the pursuit of private self – interests.**

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CUSTOMS AND RELIGION

When we talk about customs and religion

1. **They are related historically**

2. **Trust gives an inspiration to be moral.**

3. **Motivating right action based on ethical principles**

4. **Helps us to set a higher moral standards**

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USES OF ETHICAL THEORIES

- **Identifying the moral considerations or reasons that constitute a dilemma.**

- **Provides a precise sense of information**

- **Rank the relevant moral considerations**

- **Helps to reach balanced and insightful judgments**