



| Sri Venkateswara
College of
Engineering

GE18054- PROFESSIONAL ETHICS IN ENGINEERING

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GE18054 PROFESSIONAL ETHICS IN ENGINEERING

- **UNIT I - HUMAN VALUES**

Morals, values and Ethics – Integrity – Work ethic – Service learning – Civic virtue – Respect for others – Living peacefully – Caring – Sharing – Honesty – Courage – Valuing time – Cooperation – Commitment – Empathy – Self confidence – Character – Spirituality – Introduction to Yoga and meditation for professional excellence and stress management.



OBJECTIVES

- To enable the students to create an awareness on Engineering Ethics and Human Values
- To instill Moral and Social Values and Loyalty and to appreciate the rights of others.



MORALS

“**Morals** are the welfare principles enunciated by the wise people, based on their experience and wisdom.”

- (a) to understand the moral values that ought to guide the Engineering profession,
- (b) resolve the moral issues in the profession, and
- (c) justify the moral judgment concerning the profession. It is intended to develop a set of beliefs, attitudes, and habits that engineers should display concerning morality.

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?*



- (A) Improvement of the cognitive skills (skills of the intellect in thinking clearly)
 1. **Moral awareness** (proficiency in recognizing moral problems in engineering)
 2. **Cogent moral reasoning** (comprehending, assessing different views)
 3. **Moral coherence** (forming consistent viewpoints based on facts)
 4. **Moral imagination** (searching beyond obvious the alternative responses to issues and being receptive to creative solutions)
 5. **Moral communication**, to express and support one's views to others.



(B) To act in morally desirable ways, towards moral commitment and responsible conduct

6. **Moral reasonableness** i.e., willing and able to be morally responsible.
7. **Respect for persons**, which means showing concern for the well-being of others, besides oneself.
8. **Tolerance of diversity** i.e., respect for ethnic and religious differences, and acceptance of reasonable differences in moral perspectives.
9. **Moral hope** i.e., believe in using rational dialogue for resolving moral conflicts.
10. **Integrity**, which means moral integrity, and integrating one's professional life and personal convictions



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.
- **A value** is defined as a principle that promotes well-being or prevents harm.”
- Values are our **guidelines for our success**—our paradigm about what is acceptable.”
- **Personal values** : “Emotional beliefs in principles regarded as particularly favorable or important for the individual.”



- Physiologists have identified the parts of the human brain that are involved in producing behavior in accordance with beliefs and values.
- All information collected by human senses is passed through a network known as the **Reticular Activating System (RAS)**, located near the top of the brain stem. The RAS compares the data received with accepted values, positive and negative and beliefs stored in memory and determines whether or not immediate action is required.
- The results of the RAS's comparison are communicated to the **'amygdala'** near the mid-brain



Team

- Our values associate emotions to our experiences and guide our choices, decisions and actions.
- ***“Values are the scales we use to weigh our choices for our actions, whether to move towards or away from something.”***
- A person’s beliefs, values and identity are usually acquired unconsciously based on his personal experience or observations of others’ experiences as to what produces desirable or undesirable results in the environment.



CORE HUMAN VALUES

The five core human values are:

(1) Right conduct

(2) Peace

(3) Truth

(4) Love

(5) Nonviolence



- 1. Values related to **RIGHT CONDUCT** are:

(a) **SELF-HELP SKILLS**: Care of possessions, diet, hygiene, modesty, posture, self reliance, and tidy appearance

(b) **SOCIAL SKILLS**: Good behavior, good manners, good relationships, helpfulness, No wastage, and good environment.

(c) **ETHICAL SKILLS**: Code of conduct, courage, dependability, duty, efficiency,



- 2. Values related to **PEACE** are:

Attention, calmness, concentration, contentment, dignity, discipline, equality, equanimity, faithfulness, focus, gratitude, happiness, harmony, humility, inner silence, optimism, patience, reflection, satisfaction, self-acceptance, self-confidence, self-control, self-discipline, self-esteem, self-respect, sense control, tolerance, and understanding



- 3. Values related to **TRUTH** are:

Accuracy, curiosity, discernment, fairness, fearlessness, honesty, integrity (unity of thought, word, and deed), intuition, justice, optimism, purity, quest for knowledge, reason, self-analysis, sincerity, spirit of enquiry, synthesis, trust, truthfulness, and determination



4. Values related to **LOVE** are:

Acceptance, affection, care, compassion, consideration, dedication, devotion, empathy, forbearance, forgiveness, friendship, generosity, gentleness, humanness, interdependence, kindness, patience, patriotism, reverence, sacrifice, selflessness, service, sharing, sympathy, thoughtfulness, tolerance and trust



- 5. Values related to **NON-VIOLENCE** are:
 - (a) **PSYCHOLOGICAL**: Benevolence, compassion, concern for others, consideration, forbearance, forgiveness, manners, happiness, loyalty, morality, and universal love
 - (b) **SOCIAL**: Appreciation of other cultures and religions, brotherhood, care of environment, citizenship, equality, harmlessness, national awareness, perseverance, respect for property, and social justice



- 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 or the society**
- Basically it is an activity and process of inquiry.
- Ethics refers to a **particular set of beliefs, attitudes, and habits of individuals or groups concerned with morals**
- **Engineering ethics** consists of the responsibilities and rights that ought to be endorsed by those engaged in engineering, and also of desirable ideals and personal commitments in engineering.
- Engineering ethics is the **study of the decisions, policies, and values** that are morally desirable in engineering practice research.



- 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.**



INTEGRITY

- **Integrity** is defined as the unity of **Thought, Word and Deed**.
 - It includes the **capacity to communicate the factual information** so that others can make well-informed decisions. It is self-direction virtues.
 - 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 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.

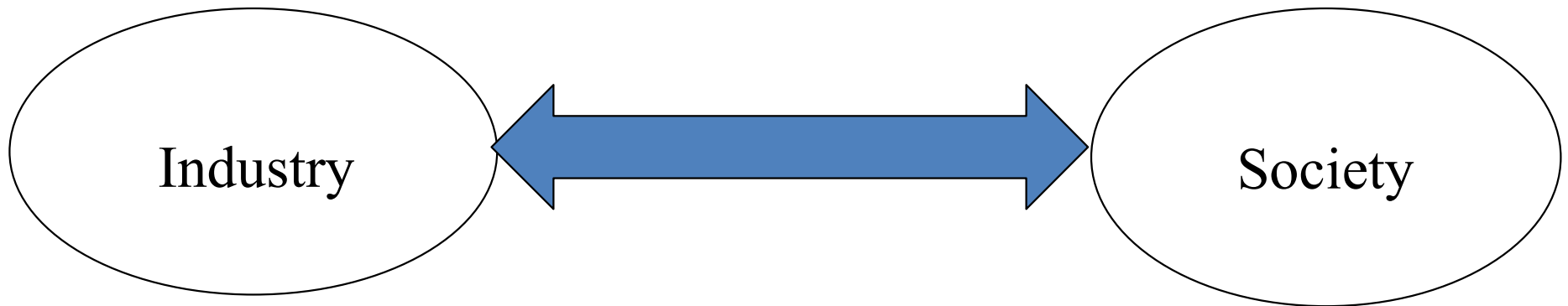


- **Moral integrity** is defined as a virtue, which reflects a **consistency of one's attitudes, emotions, and conduct** in relation to justified moral values



WORK ETHIC

- **Industry** and **Society** are the two systems which interact with each other and are interdependent.
- Society requires industry/business system which provides manufacturing, distribution and consumption activities.



It needs investment (capital input), labor (input), supply (raw materials), production (industries, business organizations), marketing and distribution (transport), and consumption (public, customer). A lot of transactions (and interactions) between these sub-systems involving people are needed for the welfare of the society. It is here, the work ethics plays an essential role



- **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, earn salary), **productivity** (wealth, profit), **safety** (in workplace), **health and hygiene** (working conditions), **security** (permanence against contractual, pension, and retirement benefits), **cultural and social development** (leisure, hobby, and happiness), **welfare** (social work), **environment** (anti-pollution activities).



- **Work ethics affirms that, the work *per se* 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



SERVICE LEARNING

- 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 others



SERVICE LEARNING

- Alternatively, the **Service Learning** may be defined as the *non-paid activity*, in which service is provided on voluntary basis to the public.
- In the **Industrial Scenario**, *Adoption, Study, and Development of Public Health or Welfare or Safety System* of a *village or school* is an example of service learning by the employees.



- 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 desirable **Attitudes** or **Character Traits**, **Motives** and **Emotions** that enable us to be successful and to act in ways that develop our highest potential
- **Civic virtues** are the **Moral Duties** and **Rights**, as a citizen of the society. An individual may exhibit civic virtues by **Voting**, **Volunteering**, and **Organizing Welfare Groups** .
- **Civic Knowledge Self-Restraint Self-Assertion Self-Reliance**



- **Civic Knowledge**

- Citizens must understand what the Constitution says about how the government is working, and what the government is supposed to do and what not to do.
- We must understand the basis of our responsibilities as citizens, besides duties and rights. We must be able to recognize when the government or another citizen infringes upon our rights.
- It implies that the government requires the participation of the enlightened citizens, to serve and survive.



- **Self-Restraint**

- For citizens to live in a free society with limited government, each citizen must be able to control or restrain himself; otherwise, we would need a police state—that is, a dictatorial government to maintain safety and order.
- He advocated for morality and declared that happiness is achieved and sustained through virtues and morals.



- **Self-Assertion**

- Self-assertion means that citizens must be proud of their rights, and have the courage to stand up in public and defend their rights. Sometimes, a government may usurp the very rights that it was created to protect. In such cases, it is the right of the people to alter or abolish that government (e.g., voting rights, rights call back).



• Self-Reliance

- Citizens who cannot provide for themselves will need a large government to take care of them. Once citizens become dependent on government for their basic needs, the people are no longer in a position to demand that government act within the confines of the Constitution.
- Self-reliant citizens are free citizens in the sense that they are not dependent on others for their basic needs. They do not need a large provider-government to meet those needs. Only a strong self-reliant citizenry will be able to enjoy fully the blessings of liberty



RESPECT FOR OTHERS

This is a basic requirement for *nurturing friendship, team work*, and for the *synergy* it promotes and sustains. The principles enunciated in this regard are:

1. **Recognize** and **Accept** the existence of other persons as human beings, because they have a right to live, just as you have.
2. **Respect** others' ideas, words, and labor.
3. **Appreciate** colleagues and subordinates on their positive actions.
Criticize constructively and encourage them.
4. Show '**Goodwill**' on others. 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, organisation where one works, and then to the world, including the environment

Nurture

1. Order in one's life (self-regulation, discipline, and duty).
2. Pure thoughts.
3. Creativity
4. Beauty in one's heart (love, service, happiness, and peace).

Get

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

Act

6. Help the needy with head, heart, and hands
7. Not hurting and torturing others either physically, verbally, or mentally.



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



CARING

- **Caring** is a process which exhibits the interest in, and support for, the welfare of others with fairness, impartiality
- 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 community



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.
- Sharing is voluntary and it can not be driven by force, but motivated successfully through ethical principles.



- 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. 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.
- 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,
(a) Truthfulness and (b) Trustworthiness.
- **Truthfulness** is to face the responsibilities upon telling truth. One should keep one's word or promise.
- 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. They build trust through reliability and authenticity



Honesty is mirrored in many ways. The common reflections are:

- (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.

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



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,*
 - (b) *Social courage, and*
 - (c) *Intellectual courage.*



- In **Physical Courage**, the *thrust* is on the adequacy of the physical strength, including the *muscle power and armaments*.
- 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.



- The **Intellectual Courage** is inculcated in people through acquired knowledge
- Facing the criticism, owning responsibility, and accepting the mistakes or errors when committed and exposed are the expressions of courage.
 - (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).



VALUING TIME

- **Time** is rare resource. Once it is spent, it is lost for ever. It can not be either stored or recovered.
- Time is the most **perishable and most valuable resource** too. This resource is continuously spent, whether any decision or action is taken or not.



The proverbs,

‘Time and tide wait for nobody’

and

‘Procrastination is the thief of time’

amply illustrate this point.



THE FOUR-QUADRANT to DO LIST

	Due Soon	Not Due Soon
Important	1	2
Not Important	3	4



COOPERATION

- It 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.
- Cooperation promotes *Collinearity*, *Coherence* , Co-ordination and the *Synergy*.
- Cooperation should exist or be developed, and maintained, at several levels; between the employers and employees, superiors and subordinates, organization and customers and among the colleagues.



- 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 motivation, leadership, fostering and rewarding team work, training on appreciation to different cultures ‘cooperation’ can be developed and also sustained.



COMMITMENT

- Commitment means alignment to goals and adherence to ethical principles during the activities
- 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.
- When the teacher is committed to his job, the students will succeed in life and contribute ‘good’ to the society.
- The commitment of top management will naturally lead to committed employees, whatever may be their position or emoluments.



EMPATHY

- Empathy is sensing what others feel about, without their open talk.
- Empathy begins with showing concern, and then obtaining and understanding the feelings of others, from others' point of view.
- It is also defined as the ability to put one's self into the psychological frame or reference or point of view of another, to know what the other person feels.



- To practice ‘Empathy’, a leader must develop, the following characteristics:
 1. *Understanding others:*
 2. *Service orientation:*
 3. *Developing others:*
- In developing others, the one should inculcate the ‘listening skill’ first.
- Communication = 22% reading and writing + 23% speaking + 55% listening.



- Giving correct feedback and positive expectation of the subject's abilities and the resulting performance.
- *Leveraging diversity*
- *Political awareness*: It is the ability to read political and social currents in an organization.
- The benefits of empathy include:
 1. Good customer relations
 2. Harmonious labor relations
 3. Good vendor-producer relationship



SELF-CONFIDENCE

- **Certainty** in one's own capabilities, values, and goals, is self-confidence
- The people with self-confidence exhibit courage to get into action and unshakable faith in their abilities, whatever may be their positions.
- They are not influenced by threats or challenges and are prepared to face them and the unexpected consequences.



The people with self-confidence have the following characteristics:

1. A self-assured standing
2. Willing to listen and to learn from others and adopt (flexibility)
3. Frank to speak the truth
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** (e.g., training by Technical Evangelists at Infosys Technologies).



- 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
 4. **Study and group discussion**, on the history of leaders and innovators (e.g., Sam Walton of Wal-Mart, USA).



CHARACTER

- It is a characteristic property that defines the **behavior of an individual**.
- Character includes attributes that determine a **person's moral and ethical actions and responses**.
- The character is **exhibited through conduct**. Character is determined by the expectations of society.
- Character implies certain unity of qualities with a recognizable degree of *constancy* in mode of action.



SPIRITUALITY

- **Spirituality** is a way of living that emphasizes the constant awareness and recognition of the spiritual dimension of nature and people, with a dynamic balance between the material development and the spiritual development.
- Spirituality includes Creativity, Communication, Recognition of the Individual As Human Being , Respect To Others, Acceptance, Vision
- Spirituality is motivation as it encourages the colleagues to perform better.
- Tolerance and empathy are the reflections of spirituality.



SPIRITUALITY IN THE WORKPLACE

1. **Verbally respect** the individuals as humans and **recognize** their values in all decisions and actions.
2. **Get to know the people** with whom you work and know what is important to them.
3. **State your personal ethics** and your beliefs clearly.
4. Support causes outside the business.
5. **Encourage leaders** to use value-based discretion in making decisions
6. **Demonstrate your own self-knowledge** and spirituality in all your actions
7. Do unto others as you would have them do unto you.



SPRITUALITY FOR CORPORATE EXCELLENCE

- 1. Self-awareness* — Realization of self-potential.
- 2. Alertness in observation and quickness in decision making,*
- 3. Being visionary and value based*
- 4. Holism* — Comprehensive views and interconnected with different aspects.
- 5. Compassion* — Sympathy, empathy and concern for others.



6. **Respect For Diversity** — Respect others and their views.
7. **Moral Autonomy** — It means action based on rational and moral judgment.
8. **Creative thinking and constant reasoning**
9. Ability to **analyze and synthesize**
10. Positive views of **adversity**
11. **Humility** — The attitude to accept criticism (it requires courage!) and willing to correct. It includes modesty and acknowledging the work of colleagues.
12. **Sense of vocation** — Treat the duty as a service to society, besides your organization.



Quit Making Excuses...



YOGA

Introduction to Yoga And Meditation For Professional Excellence & Stress Management



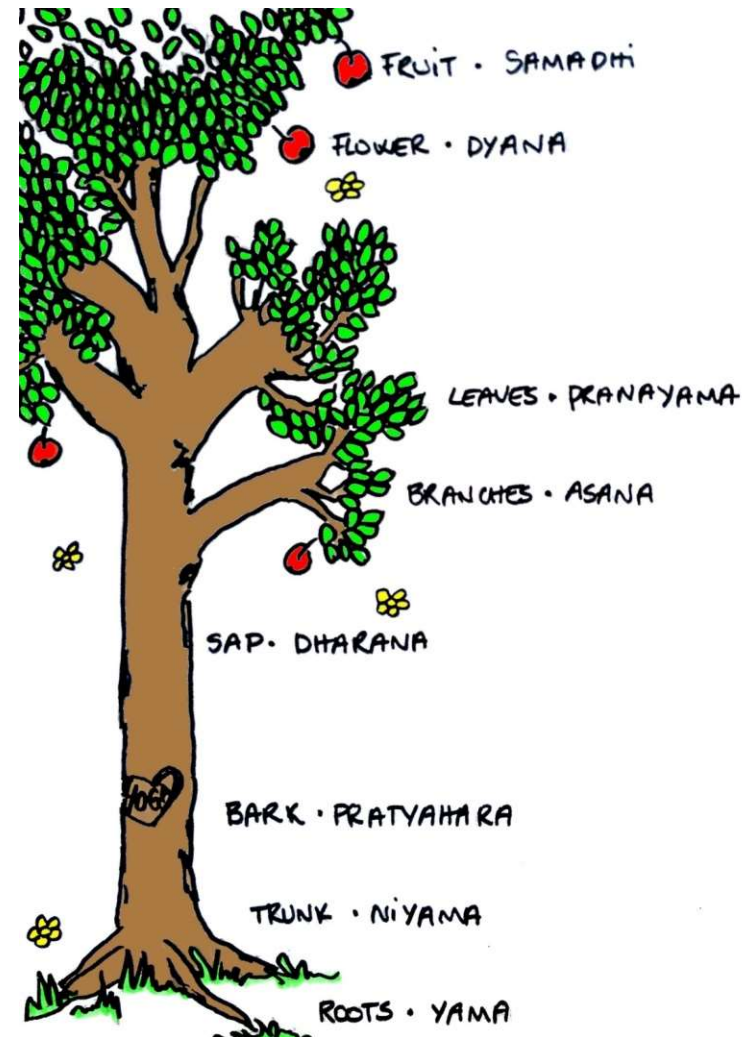
YOGA

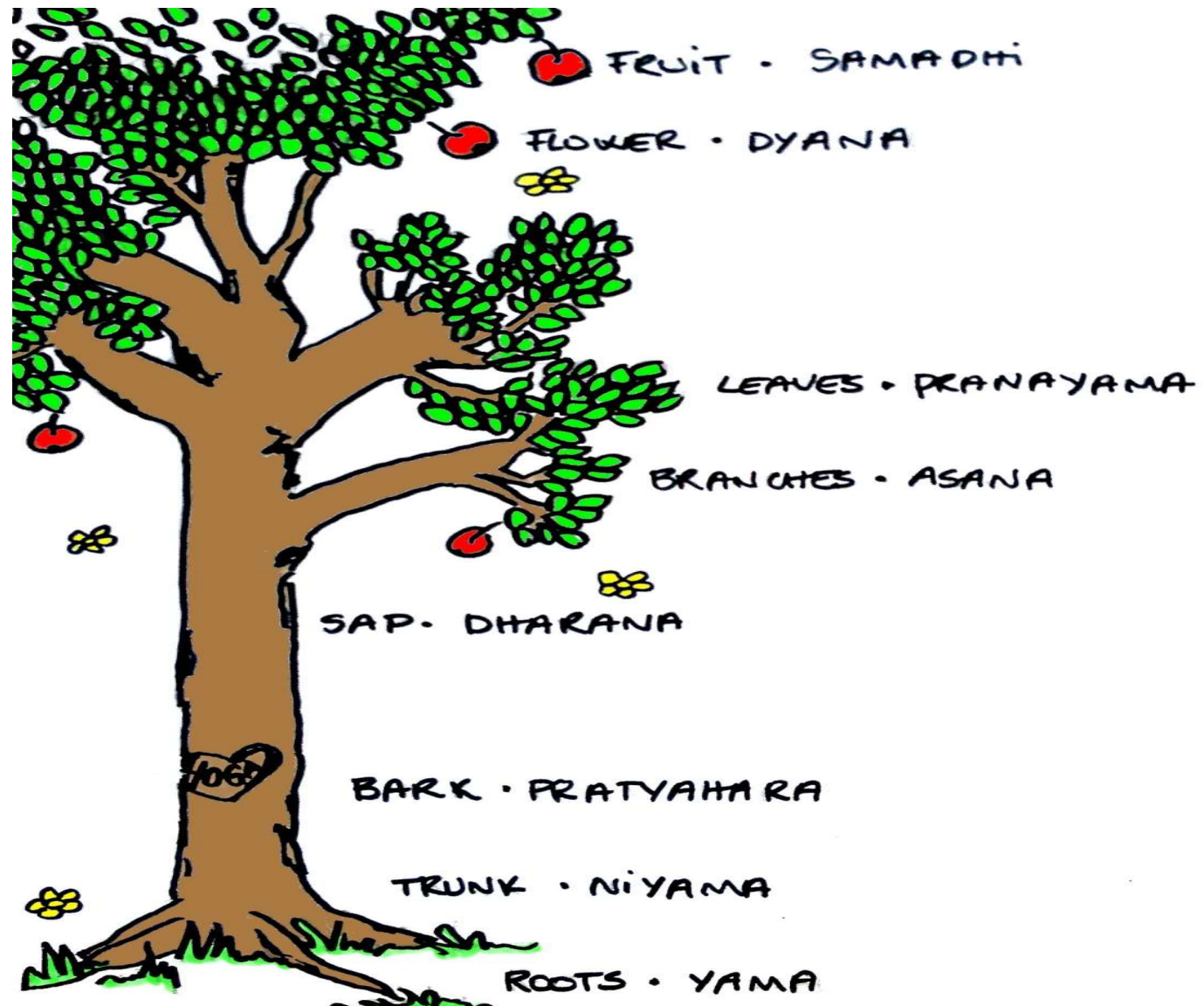
- **Yoga** is an *ancient discipline* designed to bring balance and health to the **Physical, Mental, Emotional, and Spiritual Dimensions** of the individual.
- Yoga offers an effective method of *managing and reducing* **Stress, Anxiety, and Depression**, and numerous studies demonstrate the efficacy of yoga on mood-related disorders.



- Yoga is often depicted metaphorically as a tree and comprises eight aspects, or limbs:

- Yama (Universal Ethics)
- Niyama (Individual Ethics)
- Asana (Physical Postures)
- Pranayama (Breath Control)
- Pratyahara (Control Of The Senses)
- Dharana (Concentration)
- Dyana (Meditation) And
- Samadhi (Bliss).





Yama – a list of outward observances representing principles of ethical behavior

Ahimsa: Non-violence, non-harming (do no harm).

Satya: Truthfulness or honesty. As satya is achieved, the fruits of actions naturally result.

Asteya: Non-stealing, abstension from theft.

Brahmacharya: Walking in awareness of the highest reality, remembering the divine.

Aparigraha: Non-possessiveness, non-holding through senses, non-greed,



- **Niyama** – Inward personal observances that improve the self and surrounding relations
- **Saucha or shaucha**: Purity or cleanliness. This is both internal and external. It's how we treat our bodies and our energies (internal)
- **Santosha**: Contentment. Be content with what you attain.
- **Tapas**: Discipline, training the senses.
- **Svadhyaya**: The study of one's self; careful self-observation; turning inward.



- **Ishvara Pranidhana**: Surrender to life. Live an expression of all these attitudes (niyamas). Celebrate your aliveness and surrender to it.

Asana – physical practice of yogic postures

Pratyahara – turning awareness inward, sense withdrawal

Dhayana – focused state of concentration, bringing the mind to a single point of focus

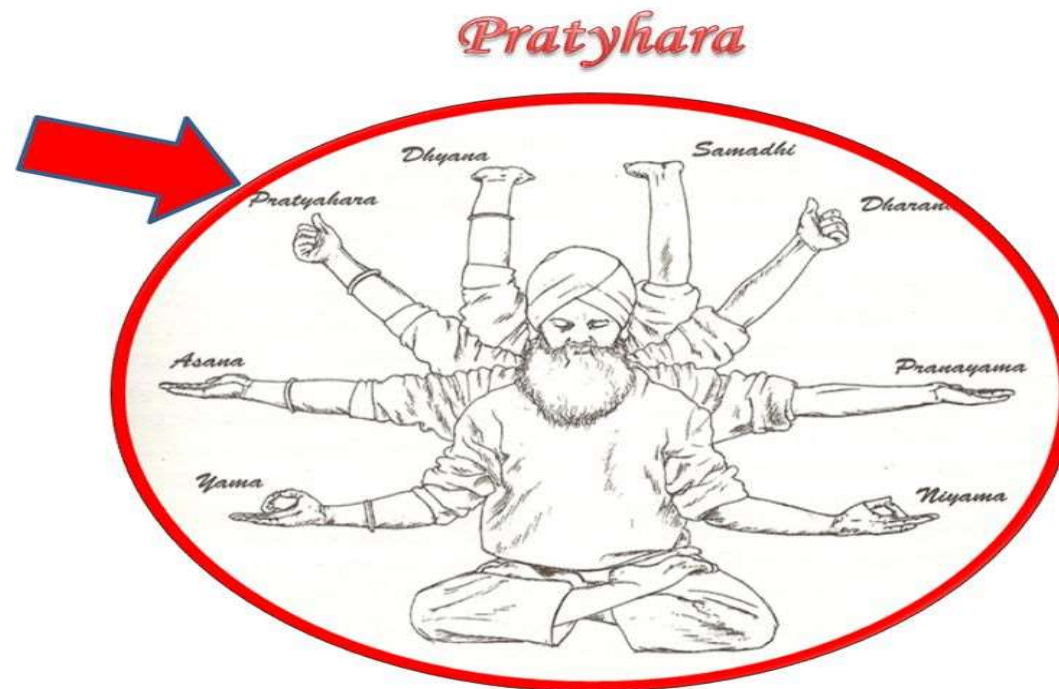
Samadhi – bliss, to feel unity, peace, freedom



ASANA — Physical Practice of Yogic Postures



Pratyahara – turning awareness inward, sense withdrawal



THE ROLE OF YOGA IN STRESS MANAGEMENT

- **Stress** is a complex, dynamic process of interaction between a person and his or her life.
- Stress can affect *one's health, work performance, social life, and the relationship* with family members.
- Stress can also be defined as the *harmful physical and emotional responses* that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker.
- Stress is a silent killer, and prolonged exposure to stress may exert harmful effects on physical, psychological, and behavioral well-being of an individual.



“BURNOUT”

- The rapid change of the modern working life is associated with increasing demands of *learning new skills*, the need to adapt to *new types of work, pressure of higher productivity and quality of work, time pressure, and hectic jobs*.
- These factors are increasing stress among the workforce.



IMPACT OF STRESS

- Stress-related disorders evolve gradually through four recognizable stages.
 1. In the first, psychological changes such as **Anxiety, Irritability,** and **Insomnia** arise, due to over-stimulation of the sympathetic nervous system.
 2. In the second stage symptoms such as **High Blood Pressure, Elevated Heart Rate,** and increased **Intestinal Motility Surface.**
 3. A more profound physical or biochemical imbalance
 4. In the final fourth stage, irreversible symptoms that often require **Surgical** or long-term management appear.



- In contrast, the **relaxation** response has been proposed as an antidote to stress; relaxation decreases **Heart Rate, Breathing, Body Temperature, and Muscle Tension**.
- Certain **yoga** techniques may improve physical and mental health through regulation of the **sympathetic nervous system** (SNS).



- Yoga significantly decreases **heart rate** and **systolic and diastolic** blood pressure.
- Studies suggest that yoga reverses the negative impact of stress on the immune system by **increasing levels of immunoglobulin A** as well as natural killer cells.
- Regardless of the **pathophysiologic pathway**, yoga has been shown to have immediate psychological effects: decreasing anxiety and increasing feelings of emotional, social, and spiritual well-being.



YOGIC SCIENCE

- It includes
 - Yogasanas (postures)
 - Pranayama (breathing practices)
 - Dhyana (meditation), and
 - Relaxation techniques

which benefit human beings at every level.



meditation





KEEP
CALM
AND
SAY

Vazhga Valamudan

வாழ்க
வளமுடன்



UNIT 2 - ENGINEERING ETHICS

Senses of 'Engineering Ethics'-Variety of Moral Issues-Types Of Inquiry-Moral Dilemmas- Moral Autonomy-Kohlberg's Theory-Gilligan's Theory-Consensus And Controversy- Professions And Professionalism-Professional Ideals And Virtues-Theories About Right Action-Self-Interest-Customs And Religion-Uses Of Ethical Theories.



CONTENTS

- **Senses of ‘Engineering Ethics’**
- **Variety of Moral Issues**
- **Types of inquiry**
- **Moral dilemmas**
- **Moral autonomy**
- **Kohlberg’s theory**
- **Gilligan’s theory**
- **Professions and professionalism**
- **Professional ideals and virtues**
- **Theories about right action**
- **Self-interest**
- **Customs and religion**
- **Uses of ethical theories**



SENSES OF ETHICS

- Ethics is an activity of
 - Understanding the moral values
 - Resolve the moral issues
 - Justify the moral judgment
- Ethics refers to a set of beliefs, attitudes, and habits that a person or group displays Concerning morality.
- Ethics is a purely factual matter about explaining beliefs and actions related to morality.
- Ethics refers to being “morally correct”
 - People’s action can be spoken as “ethical” or “unethical”
 - Individuals can be evaluated as “ethical” or “unethical”



WHAT IS ENGINEERING ETHICS

- Engineering Ethics is an activity of
 - Understanding the moral values that ought to guide the engineering profession
 - Resolve the moral issues in the profession
 - Justify the moral judgment concerning the profession.
- Morality is concerned with principles and practices of morals such as:
 - What ought or ought not to be done in a given situation?
 - What is right or wrong about the handling of a situation?
 - What is good or bad about the people, policies, and ideals involved?



- 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.



- ## Scope

- The scope of engineering ethics are twofold:

- 1. Ethics of the workplace which involves the co-workers and employees in an organization.

- 2. Ethics related to the product or work which involves the transportation, warehousing, and use, besides the safety of the end product and the environment outside the factory.



- Approach

- There are conventionally two approaches in the study of ethics:

- 1. **Micro-ethics** which deals with decisions and problems of individuals, professionals, and companies.

- 2. **Macro-ethics** which deals with the societal problems on a regional/national level. For example, global issues, collective responsibilities of groups such as professional societies and consumer groups



MORALITY VS. ETHICS

<i>Morality</i>	<i>Ethics</i>
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.



MORAL REASONING

- “Engineering design is a good one”
 - Meets Specifications – Technical Value
 - Specifications has moral content - Moral Reasons
 - Designed in such a way that a safe, reliable and environmental friendly product can be produced
- Moral Reasons
 - Require us to respect other people as well as ourselves, to care for their good as well as their own. Respecting persons by being fair and just with them, respecting their rights, keeping promises, avoiding unnecessary offense and pain to them, avoiding cheating and dishonesty



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.



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.



• 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.



- Two Approaches to engineering ethics

- Typical, **everyday problems** that can take on significant proportions in and engineer's life
- **Societal Problems** that are often shunted aside and are not addressed until they unexpectedly resurface



HOW DO MORAL PROBLEMS ARISE IN ENGINEERING

- Examples
 - Faculty construction equipment
 - Applying for a permit to operate a nuclear power plant
 - Chemical plant dumping wastes in a landfill
 - Advertisements from an electronic company for a product which is not ready for sale
- Engineer might be faced with contrary opinions
 - Within the firm
 - From the client
 - From other firms within the industry



CHALLENGES ON HANDLING MORAL ISSUES

- To what extent can a supervisor be an authoritative guide to engineer's conduct ?
- What does one do when there are differences of judgement ?
- Should one always follow the law to the letter?
- Is an engineer to do no more than what the specifications say, even if there are problems more serious than those initially anticipated?
- How far does an engineer's responsibility extend into the realm of influencing the social impact of the projects he or she participates in?



TYPES OF INQUIRIES

- The three types of inquiries, in solving ethical problems are:
 - Normative inquiry
 - Conceptual inquiry
 - Factual or descriptive inquiry



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 INQUIRY

Example:

- How far does the obligation of engineers to protect public safety extend in any given situation?
- When, if ever, should engineers be expected to blow whistle on dangerous practices of their employers?
- Whose values ought to be primary in making judgment about acceptable risks in design for a public transport system or a nuclear plant? Is it of management, senior engineers, government, voters or all of them?
- When and why is the government justified in interfering with the organizations?
- What are the reasons on which the engineers show their obligations to their employees or clients or the public?



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.
- Examples:
 - What is meant by safety?
 - How is it related to risk?
 - What is a bribe?
 - What is a profession?
- When moral concepts are discussed, normative and conceptual issues are closely interconnected.



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.



FACTUAL OR DESCRIPTIVE INQUIRY

- The facts provide not only the reasons for moral problems but also enable us to develop alternative ways of resolving moral problems.
- 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?
 4. Who conducted the tests on materials?



MORAL DILEMMA

- Dilemmas are situations in which
 - Moral reasons come into conflict
 - 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.



SITUATIONS LEADING TO MORAL 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. Good means an action that is obligatory. For example, code of ethic specifies that one should obey the laws and follow standards. Refuse bribe or accept the gift, and maintain confidentiality



2. The problem of conflicting reasons

One is unable to choose between two good moral solutions. One has to fix priority, through knowledge or value system.

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. Select the best suitable, under the existing and the most probable conditions.



STEPS TO SOLVE DILEMMA

- Identification of the moral factors and reasons.
- Collection of all information, data, and facts
- Rank the moral options
- Generate alternate courses of action to resolve the dilemma
- Discuss with colleagues and obtain their perspectives, priorities, and suggestions on various alternatives
- Decide upon a final course of action, based on priority fixed or assumed



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.



- If management views profitability is more important than consistent quality and retention of the customers that discourage the moral autonomy, engineers are compelled to seek the support from their professional societies and outside organizations for moral support.



- 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 to relate them 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 THEORY

- Kohlberg suggested there are three levels of moral development, based on the type of reasoning and motivation of the individuals in response to moral questions
 - Pre-conventional
 - Conventional
 - Post-conventional



The full story. ...

Stage 1: Obedience and punishment. ...

Stage 2: Self-interest. ...

Stage 3: Interpersonal accord and conformity. ...

Stage 4: Authority and maintaining social order. ...

Stage 5: Social contract. ...

Stage 6: Universal ethical principles. ...



STAGE 1: OBEDIENCE AND PUNISHMENT



STAGE 2: SELF-INTEREST



STAGE 3: INTERPERSONAL ACCORD AND CONFORMITY



STAGE 4: AUTHORITY AND MAINTAINING SOCIAL ORDER



STAGE 5: SOCIAL CONTRACT



STAGE 6: UNIVERSAL ETHICAL PRINCIPLES



PRE-CONVENTIONAL LEVEL



CONVENTIONAL LEVEL



POST – CONVENTIONAL LEVEL



Pre-Conventional

- Right conduct for an individual is regarded as whatever directly benefits oneself.
- At this level, individuals are motivated by obedience or the desire to avoid punishment or to satisfy their own needs
- All young children exhibit this tendency.

Conventional

- People respect the law and authority

Post Conventional

- People begin to account for the differing values, opinions and beliefs of other people.



KOHLBERG THEORY

- The following is one example of the dilemmas Kohlberg presented.

drug.

"Heinz Steals the Drug"

In Europe, a woman was near death from a special kind of cancer. There was one drug that the doctors thought might save her. It was a form of radium that a druggist in the same town had recently discovered. The drug was expensive to make, but the druggist was charging ten times what the drug cost him to make. He paid \$200 for the radium and charged \$2,000 for a small dose of

the



The sick woman's husband, Heinz, went to everyone he knew to borrow the money, but he could only get together about \$ 1,000 which is half of what it cost. He told the druggist that his wife was dying and asked him to sell it cheaper or let him pay later. But the druggist said: "No, I discovered the drug and I'm going to make money from it." So Heinz got desperate and broke into the man's store to steal the drug-for his wife. Should the husband have done that?

- Kohlberg was not interested so much in the answer to the question of whether Heinz was wrong or right, but in the *reasoning* for each participant's decision. The responses were then classified into various stages of reasoning in his theory of moral development.



Level of Moral Reasoning	Stage	Possible Response
Preconventional	<i>Punishment / Obedience</i>	<p>Heinz should not steal the medicine because he will consequently be put in prison which means you are really terrible.</p> <p>Heinz should steal the medicine because it is only worth \$200 and not how much the druggist wanted for it; Heinz had even offered to pay for it and was not stealing anything else besides.</p>
	<i>Reward / Self-Interest</i>	<p>Heinz should steal the medicine because he will be much happier if he saves his wife, even if he will have to serve a prison sentence.</p> <p>Heinz should not steal the medicine because prison is an awful place, and he would probably languish over a jail cell more than his wife's death.</p>



Conventional

Conformity / Social Approval

Heinz should steal the medicine because his wife expects it; he wants to be a good husband.

Heinz should not steal the drug because stealing is bad and he is not a criminal; he tried to do everything he could without breaking the law, you cannot blame him.

Law and Order

Heinz should not steal the medicine because the law prohibits stealing making it illegal.

Heinz should steal the drug for his wife but also take the prescribed punishment for the crime as well as paying the druggist what he is owed. Criminals cannot just run around without regard to the law; actions have consequences.



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- **Level 1. Preconventional Morality**

Stage 1-Obedience and Punishment

The earliest stage of moral development is especially common in young children, but adults are also capable of expressing this type of reasoning. At this stage, children see rules as fixed and absolute. Obeying the rules is important because it is a means to avoid punishment.

Stage 2 - Individualism and Exchange

At this stage of moral development, children account for individual points of view and judge actions based on how they serve individual needs. In the Heinz dilemma, children argued that the best course of action was the choice that best-served Heinz's needs. Reciprocity is possible, but only if it serves one's own interests.



- **Level 2. Conventional Morality**

Stage 3 - Interpersonal Relationships

often referred to as the "good boy-good girl" orientation, this stage of moral development is focused on living up to social expectations and roles. There is an emphasis on conformity, being "nice," and consideration of how choices influence relationships.

Stage 4 - Maintaining Social Order

At this stage of moral development, people begin to consider society as a whole when making judgments. The focus is on maintaining law and order by following the rules, doing one's duty and respecting authority.



- Level 3. Post conventional Morality

Stage 5 - Social Contract and Individual Rights

At this stage, people begin to account for the differing values, opinions and beliefs of other people. Rules of law are important for maintaining a society, but members of the society should agree upon these standards.

Stage 6 - Universal Principles

Kohlberg's final level of moral reasoning is based upon universal ethical principles and abstract reasoning. At this stage, people follow these internalized principles of justice, even if they conflict with laws and rules.



GILLIGAN'S THEORY

- Gilligan observes that Kohlberg's stages were derived exclusively from interviews with males, and she charges that the stages reflect a decidedly male orientation.
- For males, advanced moral thought revolves around rules, rights, and abstract principles. The ideal is formal justice, in which all parties evaluate one another's claims in an impartial manner. This conception of morality, Gilligan argues, fails to capture the distinctly female voice on moral matters.



- Gilligan says
 - morality centers not on rights and rules but on interpersonal relationships and the ethics of compassion and care.
 - The ideal is not impersonal justice but more affiliative ways of living.
 - Women's morality, in addition, is more contextualized; it is tied to real, ongoing relationships rather than abstract solutions to hypothetical dilemmas.



- Understanding the needs, interests, and welfare of another person, and understanding the relationship between oneself and that other requires a stance toward that person informed by care, love, empathy, compassion, and emotional sensitivity.
- It involves, for example, the ability to see the other as different in important ways from oneself, as a being existing in her own right, rather than viewing her through a simple projection of what one would feel if one were in her situation.



<i>Kohlberg's Theory</i>	<i>Carol Gilligan's Theory</i>
<i>A. Basic Aspects</i>	
<ol style="list-style-type: none"> 1. Is based on the study on men. 2. Men give importance to moral rule. 3. Ethics of rules and rights. 	<ol style="list-style-type: none"> 1. Is based on the study on men and women 2. Women always want to keep up the personal relationships with all the persons involved in the situations. 3. Women give attention to circumstances leading to critical situations rather than rules: (context-oriented and ethics of care)
<i>B Characteristic Features</i>	
<ol style="list-style-type: none"> 1. Justice 2. Factual 3. Right or wrong 4. Logic only 5. Logic and rule-based 6. Less of caring 7. Matter of fact (practical) 8. Present focus 9. Strict rules 10. Independence 11. Rigid 12. Taking a commanding role 13. Transactional approach 	<ol style="list-style-type: none"> 1. Reason 2. Emotional 3. Impact on relationships 4. Compassion too 5. Caring and concern 6. More of caring 7. Abstract 8. Future focus 9. Making exceptions 10. Dependence 11. Human-oriented 12. Shying away from decision-making 13. Transformational approach



KOHLBERG'S THEORY VS. GILLIGAN'S THEORY

- For Kohlberg the mode of reasoning which generates principles governing right action involves formal rationality alone. Emotions play at most a remotely secondary role in both the derivation and motivation for moral action.
- For Gilligan, by contrast, morality necessarily involves an intertwining of emotion, cognition, and action, not readily separable. Knowing what to do involves, knowing others and being connected in ways involving both emotion and cognition.



CONSENSUS AND CONTROVERSY

- Consensus means agreement.
- Controversy means Disagreement.
- The ethics make the engineers realize the importance of tolerance among them in case of disagreement while applying moral autonomy.



PROFESSION

Profession can only be applied to certain occupations which meet the following criteria -

- Knowledge: The work involves exercising sophisticated skills , theoretical knowledge and judgment and discretion that is not entirely routine or subject to mechanization.
- Organization: Special societies and organizations controlled by members of the profession are allowed by the public to play a major role in setting standards for admission to the profession.
- Public Good: The occupation serves some important aspects of public good as indicated in the codes of ethics.

- Professional

- Relate to person or any work that person does on profession which require expertise

- Professionalism

- Certain attitude or qualities that are expected of a professional



- The criteria for achieving and sustaining professional status or professionalism are:
 1. **Advanced expertise:** The expertise includes sophisticated skills and theoretical knowledge in exercising judgment. A professional should analyse the problem in specific known area, in an objective manner.
 2. **Self-regulation:** One should analyse the problem independent of self-interest and direct to a decision towards the best interest of the clients /customers. An autonomous judgment is expected.
 3. **Public good:** One should not be a mere paid employee of an individual or a teaching college or manufacturing organization, to execute whatever the employer wants one to do. The job should be recognised by the public. The concerted efforts in the job should be towards promotion of the welfare, safety, and health of the public.



MEMBERSHIP CRITERIA

- Earning bachelor's degree in engineering at a school approved by the ABET (Accreditation Board for Engineering & Technology) .
- Performing commonly recognized as what engineers do.
- Being officially registered and licenses as a Professional Engineer(PE).
- Acting in morally responsible ways while practicing engineering.



MODELS OF PROFESSIONAL ROLES

- **Savior:** The representative engineer is a savior who will redeem society from poverty, inefficiency, waste and drudgery of manual labor.
- **Guardian:** The representative engineer knows the directions in which and pace at which, technology should develop. Accordingly they should be given positions of high authority based on their expertise in determining what is in the best interest of the society.



MODELS OF PROFESSIONAL ROLES

- **Bureaucratic servant:** The role of engineer is to be a servant who receives and translates the directives of the management into concrete achievements.
- **Social servant:** The role of engineers' lies in obedient service to others but their true master is society.
- **Social enabler or catalyst:** Ultimate power lies with the management. Nevertheless, the engineer plays a vital role beyond mere compliance with orders.
- **Game Player:** Engineers are neither servants nor masters. They play by the economic game rules that happen to be in effect at a given time.
 - For example, Narayanamurthy, Infosys and Dr. Kasthurirangan



VIRTUE ETHICS

- Actions are considered right if they support good character traits (virtues) and wrong if they support bad character traits (vices)
- Closely tied to personal honor



THEORIES ABOUT VIRTUES

- **Aristotle: Virtue and the Golden Mean**
 - Aristotle, the most influential of all virtue ethicist, defined the virtues as acquired habits that enable us to engage effectively in rational activities.
 - Moral virtues are tendencies, acquired thro' habit formation, to reach a proper balance between extremes in conduct, emotion, desire and attitude.
 - Virtues are tendencies to find “The Golden Mean” between the extremes of too much and too little.
 - E.g. Truthfulness is the mean between revealing all information in violation of tact and confidentiality and being secretive.



THEORIES ABOUT VIRTUES

- **Macintyre: Virtues and Practices**
 - ✓ Macintyre is a contemporary ethicist who has stimulated a renewed interest in virtue ethics and applied it to thinking about professional ethics.
 - ✓ Macintyre begins with the idea of social practices.
 - ✓ Cooperative activities aimed toward achieving public goods that could not otherwise be achieved, at least not to the same degree.
 - ✓ These goods are internal to the practices in that they define what the practices are all about.
 - ✓ They differ from external goods.
 - E.g. The primary internal good of medicine is the promotion of health.



PROFESSIONAL RESPONSIBILITY

- is being morally responsible as a professional.
- is an umbrella virtue that encompasses a wide variety of more specific virtues that acquire importance in particular situations
- Many of the virtues can be grouped into four categories
 - **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.
 - **Public-spirited virtues** - Maintaining a sense of community with faith and hope within the society and being generous by extending time, talent and money to professional societies and communities, an engineer can maintain the public-spirited virtue.
 - **Team-work virtues** - a performance virtue that disposes one to work toward the goals of their respective team,
 - **Proficiency virtues** - virtues followed in the profession according to the talent and intellect of an engineer.



INTEGRITY

- is the unity of character on the basis of moral concern, and especially on the basis of honesty.
- The unity is consistency among our **attitudes, emotions and conduct** in relation to justified moral values.
- Integrity makes possible the virtues of self-respect and pride in one's work.



HONESTY

- Honesty has two aspects:
 - Truthfulness
 - Meeting responsibilities concerning truth-telling
 - Trustworthiness
 - Meeting responsibilities concerning trust.
- List of specific virtues that truthfulness and trustworthiness imply:
 - Honesty in acts
 - Honesty in speech
 - Honesty in beliefs
 - discretion



SELF RESPECT

- is valuing oneself in morally appropriate ways. Properly valuing oneself, Self esteem, sense of his own value, confidence in one's ability
- takes two forms:
 - **Recognition self-respect** – inherent moral worth
 - **Appraisal self-respect** – valuing ourself how we are meeting Moral standards
- Specific virtues for self respect
 - **A sense of honor** – Emotions of self respect and Min. Requirement – pride in maintaining High Professional Standard
 - **Self-control** – Maintaining Personal Discipline, avoid half-hearted commitment
 - **Courage** - disposition to confront dangers
 - **Good judgment** – Concern self-oriented and social oriented goods



- Self-respect is different from self-esteem in the following manner:

<i>Self-respect</i>	<i>Self-esteem</i>
<ol style="list-style-type: none">1. A moral concept2. Valuing oneself in morally-suitable ways3. It includes virtues of recognition and appraisal. It promotes virtues of sense of honor, self-control and courage	<ol style="list-style-type: none">1. A psychological concept2. Having a positive attitude towards oneself. It may be excessive or unwarranted or normal



SENSES OF RESPONSIBILITY

- **Characteristic Quality** — Primarily responsibility implies duty with care and efforts.
- **Obligations** — duties to perform morally right acts, truthfulness, fair, promote justice
 - **For example**, a Safety Engineer has a responsibility to make regular inspections in a factory shops
- **General moral capacity of people** —how to act morally appropriate way
- **Liability and Accountability**
 - It means that one is liable (with a legal sense) to meet the obligations in better ways. The person is likely to respond legally, if necessary.
 - one is willing to justify or defend the decisions, actions or means and outcomes.
- **Blameworthiness/Praiseworthiness** — design antenna tower/collapse



TYPES OF RESPONSIBILITY

- Moral responsibility
 - Obligations
 - Accountability
 - Praiseworthy/Blameworthy
- Casual responsibility — simply in being cause of some event, lightning to catch house fire
- Legal responsibility — Engineer firm legal responsible

