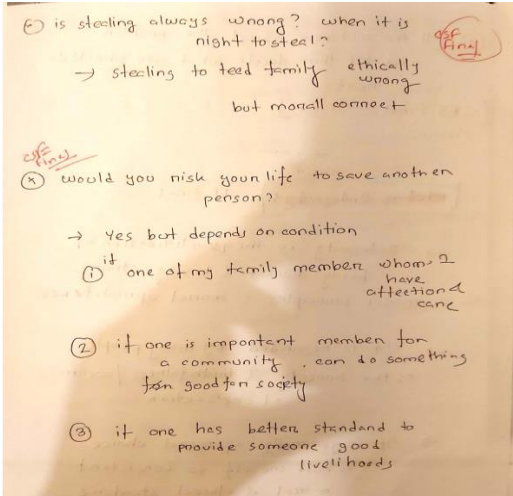


Ethics: refers to the standards of conducts, standards that indicate how one should behave based on moral duties and virtues, which are derived from the principles of right and wrong .		How to deal with ethical problems : 6 steps		3 types of inquiries		
Engineering ethics : The study of moral values , issues and decisions involved in engineering practice. Moral values include <ul style="list-style-type: none">- Responsibility- Ideals- Character traits- Social policies- Relationship between individual and corporation	Moral Refers to personal behavior We do it because we believe it to be right or wrong Social convention about right and wrong Refers to any kind of human action	Ethics Refers to professional behavior We do it because society says it's the right thing to do Critical reflection about what one does and why one does it Involves defining, analyzing, evaluating, resolving, and developing moral criteria to guide human behavior	1) Recognize the problem 2) Gather information and define the problem 3) Generate alternative solutions 4) Evaluate benefits and cost of alternative solutions 5) Decision making and optimization 6) Implement the best option	Normative Based on values Identify and justify morally desirable norms or standards that should guide individual and groups	Conceptual Based on meaning Clarify the meaning of concept/ideas/principals that are expressed by words or by questions and statements	Factual Based on facts Descriptive inquiry Obtain facts needed for understanding and resolving value issues Facts provide both reasons and way to resolve moral problems
	4 fundamental aspects : <ol style="list-style-type: none">1) Identify and enlist the type of ethical issues2) Clarify the related concept theories3) Guide and help in resolving and confronting ethical and moral dilemmas4) Stimulate critical and responsible reflection and useful discussion on these topics	Why? <ul style="list-style-type: none">- Receive inputs in<ol style="list-style-type: none">1) Basic engineering science2) Design3) Manufacture4) Software skill5) Technical problem-solving ability	Moral autonomy : concerned with decision making power of a person with regard to ethical issues. <ul style="list-style-type: none">- Skill/habit of thinking rationally about ethical issues Engineering ethics : 2 types: Micro Typical problems Everyday Professional level	3 components : <ol style="list-style-type: none">1) The fundamental canon2) The rules of practice3) Professional obligations Reasoning : Def : focus on finding the best or at least the reasonably better means for obtaining goals , health safety etc. 2 types : <ol style="list-style-type: none">1) Practical Reasoning: use different methods (math and science)2) Ethical reasoning: societal life, justice, equality, freedom, safety, health	Ethical framework : 5 <ol style="list-style-type: none">1) Rights2) Virtue3) Utilitarian4) Justice5) Ethics care ****Integrity : qualification of being honest and having strong moral principles and moral uprightness	
3 reasons of unethical behavior : <ul style="list-style-type: none">- Resource crunch- Attitude- Opportunity Moral dilemma : is a problem in the decision-making process between two possible options , neither of which is absolutely acceptable from an ethical perspective. <ul style="list-style-type: none">- Refers to situations when difficult choice has to be made based on conflicting moral issues involved Solution : 3 steps <ol style="list-style-type: none">1) Refute the dilemma2) Value theory approach3) Find alternative solution	3 ways to solve conflict problem : Easy Choice: most significant and important	Creative Middle Choice: Finding out and attempting some kind of compromise that will at least partially satisfy available choice	Hard Choice: When both the choice is not feasible	4 senses <ol style="list-style-type: none">1) Field of inquiry and activity2) Distinguish between moral and non-moral problems3) Refers to a particular set of beliefs, attitudes, and habit that a person / group display4) Refers to principal of ideas, obligation and rights which are morally justified Typical ethical issues that engineer encounter : 11 <ol style="list-style-type: none">1) Safety2) Acceptable risk3) Compliance4) Confidentiality5) Environmental health6) Data integrity7) Conflict of interest8) Honesty and dishonesty9) Fairness10) Societal impact11) Accounting for uncertainty	Profession : is a life career which requires special knowledge , practical training , and continuous in-service training with a clearly defined membership of a particular group evolving its own codes of ethics. Professional Engineer : who earns a degree in engineering at an institution approved and recognized by duty constituted authority like AICTE (All India Council for Technical Education)	6 roles : <ol style="list-style-type: none">1) Savior: protects society from harmful effects2) Guardian: know the best option in technological advancement3) Bureaucratic servant: receive and translate the directive of his superiors4) Social servant: provide service with responsibilities and satisfy desire of society5) Social enabler and catalyst: help and understand what the society needs and make decisions6) Game player: play according to economic game rule 2 dimensions : <ol style="list-style-type: none">1) Social responsibility2) Professional responsibility

Moral Development Theory						Ethical Theories: 4 (religious, duty, util, kant)		Use of ethical theories	Code of ethics
Kohlberg's Theory: ethics of rules and rights : 3 level			Gilligan's theory: ethics of care : 3 levels			1) Virtue	2) Duty 3) Rights	1) Help us understand and resolve moral dilemmas 2) Help to justify moral obligations 3) Help to relate professional morality and general morality Kan't approach : 4 steps <ul style="list-style-type: none">- If something is wrong --- always wrong- Happiness != morality- Treat others the way you like to be treated- Imagine the situation from both point of view	Def: set of principles and rules used by individuals and organizations to govern their decision-making process as well as to distinguish right from wrong Consider 5 things : <ol style="list-style-type: none">1) Individuality2) Objectivity3) Confidentiality4) Professional competence5) Professional behavior 
Pre-conventional Level	Conventional Level	Post-conventional Level	Pre-conventional Level	Conventional Level	Post-conventional Level	Oldest ethical theory Wisdom Enables good judgement Follow moral virtue Integrity, honesty, self-respect, responsibility	4) Utilitarianism Def : It means maximizing the utility which again points to producing most goods for most people Overall balance of good over bad consequence 2 types : Act-utilitarianism Refers to result of a single action	Rule-utilitarianism Refers to result of following a rule of conduct Satisfy rational desire	
Most primitive level Satisfy themselves Obey authority implicitly to escape punishment Mainly this behavior is seen in children Many of the grown-ups don't raise themselves above this level. Any conduct is done which benefits individuals	Loyalty and identifications are hallmarks at this level Satisfy others Obey authority implicitly in cost of own interest Most adults do not cross or think beyond this stage	Individuals at this able can think of principles of rights , right conduct and general good regardless of convention and individual interest . Do what is morally reasonable and maintain integrity Don't follow customs They're called autonomous and are not influenced by the customs and beliefs unless they are for public good	Self-centered reasoning Think about others Don't hurt them Willing to help and nurture others	Balance between caring for others and establish their individual rights and interests.					