CH2- Profession and Ethics

2.1 Profession: Definition and Characteristics

2.2 Professional Institutions

2.3 Relation of an Engineer with Client, Contractor and Fellow Engineers

2.4 Ethics, Code of Ethics and Engineering Ethics

2.5 Moral Dilemma and Ethical Decision Making

2.6 Detailed Duties of an Engineer and Architect

2.7Liability and Negligence

society

Ethics

Professionalism

YOURSELF WHEN MAKING AN ETHICAL DECISION

10. Could the decision become habit forming?
If so, don't do it.
9. Is it legal?
If it isn't, don't do it.
8. Is it safe?
If it isn't, don't do it.
7. Is it the right thing to do?
If it isn't, don't do it.
6. Will this stand the test of public scrutiny?
If it won't, don't do it.
5. If something terrible were to happen, could I defend my actions?
If you can't, don't do it.

YOURSELF WHEN MAKING AN ETHICAL DECISION

4. Is it just, balanced, and fair?
If it isn't, don't do it.
3. How will it make me feel about myself?
If it's lousy, don't do it.
2. Does this choice lead to the greatest good for the greatest number?
If it doesn't, don't do it.
And the #1 question you should ask yourself when making an ethical decision:
1. Would I do this in front of my mother?
If you wouldn't, don't do it.

(Taylor, 1990)

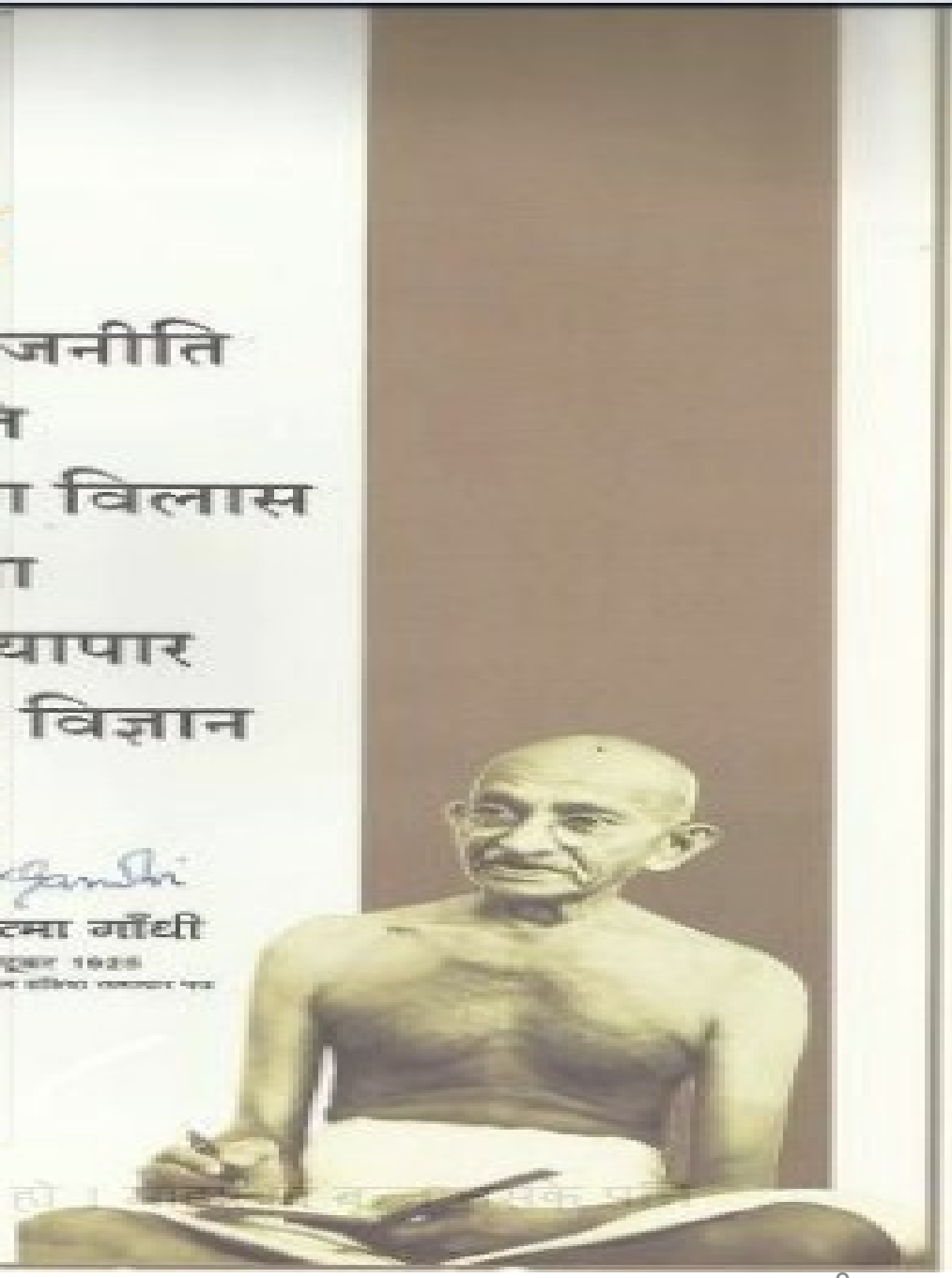
- Seven sins by Mahatma Gandhi

1. **Wealth Without Work**
2. **Pleasure Without Conscience**
3. **Knowledge Without Character**
4. **Commerce (Business) Without Morality (Ethics)**
5. **Science Without Humanity**
6. **Religion Without Sacrifice**
7. **Politics Without Principle**

सात पाप

सिद्धान्त विहीन राजनीति
श्रम विहीन सम्पत्ति
विवेक विहीन भोग विलास
चरित्र विहीन शिक्षा
नैतिकता विहीन व्यापार
मानवीयता विहीन विज्ञान
त्याग विहीन पूजा

महात्मा गाँधी



1. Right View. The right way to think about life is to see the world through the eyes of the Buddha--with wisdom and compassion.

2. Right Thought. We are what we think. Clear and kind thoughts build good, strong characters.

3. Right Speech. By speaking kind and helpful words, we are respected and trusted by everyone.

4. Right Conduct. No matter what we say, others know us from the way we behave. Before we criticize others, we should first see what we do ourselves.

5. Right Livelihood. This means choosing a job that does not hurt others. The Buddha said, "Do not earn your living by harming others. Do not seek happiness by making others unhappy."

6. Right Effort. A worthwhile life means doing our best at all times and having good will toward others. This also means not wasting effort on things that harm ourselves and others.

7. Right Mindfulness. This means being aware of our thoughts, words, and deeds.

8. Right Concentration. Focus on one thought or object at a time. By doing this, we can be quiet and attain true peace of mind.

Four Truth of Buddha

- What's wrong with me?
- Why am I sick?
- What will cure me?
- What do I have to do get well?

History of code

- The history can be traced out from the code of conduct of Hammurabi , the king of Babylon **1792-1750 BC**
- "An eye for an eye, and a tooth for a tooth."
- The builder shall be put to death , if the house he builds collapse and causes death of the house owner
- The builders son shall be put to death, if the houses the builder built causes the death of the son of the house owner
- The builder shall compensate the house owner with the slave of equal value , if the house the builder has built causes the death of a slave of the house owner
- The builder shall restore at his own expense, if the house the builder has built destroys the property of the house owner
- In Nepal, NEA has approved and adopted the code first time March 1969.

PROFESSIONALISM

- Objective:
- any professional conduct needs codes of ethics and guidelines to maintain high level of standard of good behavior or conduct in the public.
- Engineers create facilities and services by any or all of the acts and do so by applying engineering principles and the experiences gained.
- Fundamental of ethics:
- The national society of professional Engineers NSPE US approved by the board of directors on 5th Oct 1977 has set the following principles for engineers to support and advance the integrity, honor and dignity of engineering profession by
- Using their knowledge and skill for the advancement of human welfare
- Being honest and impartial and serving with loyalty the public, their employers and clients.
- Striving to increase the competencies and prestige of engineering profession
- Supporting the professional and technical societies of their disciplines.

- Five fundamental ethical values for codes
  - **Protection of life and safeguarding people**
  - **Sustainable management and care for the environment**
  - **Community well being**
  - **Professionalism, integrity and competence**
  - **Sustaining engineering knowledge**

PROFESSIONALISM

- Some other basic norm for professional engineers as below
  - Welfare of public
  - Serve in area of competences
  - Issue public statement in an objective and truthful manner
  - Shall act as faithful or trustee
  - Should build their reputation, unfairness to others
  - Enhance honor, integrity and dignity of the profession
  - Professional career development
  - Advertise on factual representation
  - Do not offer or accept the hidden payment
  - Do not disclose confidential matter(information)
  - Do not engage in conflicting services
  - Sign those documents which are prepared under his direct involvement
  - Report if any unethical matter in your knowledge etc.

PROFESSIONALISM

Professional ethics concerns the moral issues that arise because of the specialist knowledge that professionals attain, and how the use of this knowledge should be governed when providing a service to the public.

Nepal Engineering Council

Professional Code of Conduct

The professional code of conduct to be followed by the registered engineers of the council, subject to the provision of Nepal Engineering Council Act, 2055 (1998) and Nepal Engineering Council Regulation, 2057 (2000), has been published as the following:

A Conflict of Interest Policy Incorporates an Organization's Ethics, Values and Integrity

PROFESSIONALISM

Preamble: Whereas, it is expedient to make the provision of Nepal Engineering Council in order to make the engineering profession effective in the State of Nepal and mobilize it in a systematic and scientific manner as well as to provide for, among other matters, the registration of the names of engineers as per their qualifications;

Now, therefore, be it enacted by Parliament in the twenty-seventh year of the reign of late King Birendra.

PROFESSIONALISM

1. **Discipline and honesty**:
2. **Politeness and secrecy:**
3. **Non-discrimination:**
4. **Shall have to do only the concerned professional work:**
5. **Not to do such works, which may cause harm to engineering profession:**
6. **Personal responsibility:**
7. **State name, designation, registration no:**
8. **No publicity or advertisement shall be made which cause unnecessary effect:**

Oath

I ..... having been registered with the Nepal Engineering Council agree to be governed by the memorandum, rules regulations and byelaws of the council, as they now stand or as they may hereafter be altered or added to according to law and I undertake to observe the ethics of the profession and to promote objects and interest of the council in so far as it lies in power.

Other code of ethics

- Other professional association has also provide the code of ethics
- NEA (Nepal Engineering Association), SOMEN , etc.
- SCAFF (Society of consulting Architecture and engineer's)
- FCAN (Federation of Contractors Association of Nepal)
- APEGGA (the association of Professional Engineers Geologists, and geophysicists of Alberta)
- ACM (Association for Computing Machinery)
- What are content of theses code ?

Quality of engineer

1. Knowledge of technology
2. Social understanding
3. Economical realities
4. Legal awareness
5. Environmental skills
6. Management skills
7. Leadership and innovation

Relation with public

- The Engineer,

1. Will have proper regard for the for the health, safety, and welfare of public
2. Will endeavor to extend public knowledge and appreciation of engineering profession and to dissemination engineering knowledge
3. Will be dignified and modest in explaining his work and merit and refrain from misrepresentative self-laudatory advertisement
4. Will express an opinion on an engineering subject

Relation with public

- Relation with client, with employer

1. Will act as faithful agent or trustee for employee or client.
2. Will not accept compensation or remuneration from more than one party for same services or service pertaining same work, without the consent of all interested parties.
3. Will inform his employer o client of his financial interest in any vendor or contractor and this should not affect to his services.
4. Will indicate employer the adverse consequences if his judgment is overruled.
5. Will undertake only those engineering assignments for which he is qualified.
6. Will not disclose information concerning business affairs or technical process.
7. Will not divulge any confidential findings of studies or action of any commission or broad in which he is member.
8. Will not exert undue influence or offer solicit or accept compensation for the purpose of affairs negotiations for an engineering engagement.

Relation with engineers

1. Will take care that credit for engineering works is given to those directly responsible for.
2. Will provide complete information on working conditions and status of employment.
3. Will uphold the principle of appropriate and adequate compensation for those engaged in engineering works.
4. Will endeavor opportunity for professional development and advancement of fellow engineer under his supervision.
5. Will not attempt to injure falsely or maliciously professional reputation, prospects or practice of other engineer
6. However, he has proof that engineer has been unethical, illegal or unfair in his practice, he should so advise to proper authority.
7. Will not use the advantage of salaried position to compete unfair with other engineer.
8. Should give due regards to all professional aspects of the engagement.
9. Will not attempt to supplant other engineer in a particular engagement.
10. Will not review the work of other engineer for the same client except with the knowledge of such engineer.
11. Will cooperate in advancing the engineering profession by interchanging information and experience with other engineers by contributing to public communication media.

Responsibilities of engineers

- Will be honest and fair, will serve the client and e the public with devotion
- Will dedicate himself to the advancement of the competence of the engineering profession
- Will use the knowledge and skill in the favor of humanity
- RESPONSIBILTY TOWARDS THE NATION
- MORAL RESPONSIBILITY
- INVOLVEMENT IN COMMUNITY DEVELOPMENT
- REFRAIN FROM WORKS WHICH ARE AGAINST NATIONAL INTEREST

Responsibilities of engineers

- RESPONSIBILTY TOWARDS THE CLIENT
- TO GAIN AND MAINTAIN CLIENT CONFIDENCE
- TO BE LOYAL TO THE CLIENTS
- TO PROTECT INTEREST OF CLIENT
- TO SAFEGUARD CLIENT COFIDENTIAL INFORMATION
- TO DISCLOSE THE CONFLICT OF INTEREST

Responsibilities of engineers

- RESPONSIBILTY TOWARDS THE PROFESSION
- THE NECESSITY OF FORMER QUALIFICATION
- REFRAIN FROM CLAIMING SKILL NOT IN HIS/HER PROFESSION
- THE NEED TO EXERCISE GREATER SKILL IN SPECIALISED JOBS
- THE NEED FOR HIGH QUALITY OF SKILL
- ELIGIBILTY FOR agreed remuneration only
- Refrain from holding position where there is conflict of interest
- The need for professional development

Relationship of engineering profession to basic science and technology; relationship to other professions

- Engineering itself is an application of knowledge and skills acquired through a specialized training, education and experiences and practicing the same as an occupation in the areas of public safety, health and property protection. In short it is a systematic application of knowledge and skill.

- The basic science teaches us the law of nature, properties of matters and sources of power that are available around us. Technology teaches us the best application of those laws of nature and utilization of the properties of matters and sources of power by which, engineer can make new facilities and create new services.

Engineering Professional Practice Sectors in Nepal

1. Public sectors (organisation that are run with the budget sanctioned by government).
2. Private sector (organisation that are run with the budget sanctioned by private).
3. NGO./CBO sector (organisation that are run with the budget sanctioned by Mon government .

Public sectors

- Government organisation (ministries) Department, Regional , district office,
- Board, project,
- Constitutional body
- commission, parliament, court, CIAA, Office of attorney general, Centre for national vigilance,
- Corporation ,Municipalities, DDC, VDC
- Universities, institute etc
- Ministries enlisted

Engineering Professional Practice
Sectors in Nepal

- Private sector (organisation that are run with the budget sanctioned by private).
- NGO./CBO sector (organisation that are run with the budget sanctioned by non government .

General Job description of engineers

- An engineer has following responsibilities

1. Vision
2. Mission
3. Program
4. Implement
5. Supervision
6. Monitoring
7. Training
8. Enhance profession
9. An engineer involve one of
10. Private sector
11. Public sector
12. Free consultant

An engineer assign one of

1. Consultant
2. Contractors
3. An engineer serve as
4. Designer
5. Programmer
6. execution
7. Surveyor
8. Supervisor/ monitoring
9. Administrative
10. Researcher/ analyzer
11. Academician (teacher/professor/trainer)
12. Preliminary survey, prefeasibility, feasibility, detail design , estimate

Typical TOR of a private sector Engineers

1. To coordinate works between stake holders
2. To layout, survey, estimate,
3. Supervisory work, schedule , monitor, time, quality, cost control
4. Reporting to concern agency
5. Quantity survey and bill preparation
6. To plan project and progress report
7. Technical report and claims
8. Training and guide for new entrants and worker
9. Overall management, (site in charge)

Public Service commission provide job description of engineer

3rd Class

1. Preliminary survey, prefeasibility, feasibility, detail design , estimate
2. Execution of project works
3. Reporting
4. Pre activities
5. Interim progress
6. Monitoring
7. Evaluation
8. Post implementation report
9. Job assigned by immediate boss (superiors)
10. To facilitate donor agency
11. Job specific for engineers

2nd class

1. Planning, programming, and execution of works
2. Research on technology, cases, various skill upgrade
3. Monitoring and evaluation
4. Supervision of project
5. Administrative works
6. Financial planning a and administration

Relationship of engineering profession to basic science and technology; relationship to other professions

- **Science: …. A system of data and relationship covering vast areas of information derived from observation analysis and manipulation of natural phenomenon.**
- **Technology: how thing are commonly done or made, what things are done or made.**

- **A study of the technical means undertaken in all cultures (a universal) which involves the systematic application of organised knowledge (synthesis) and tangible (tools and material) for the extension of human faculties that are restricted as a result of the evolutionary process. Evident, knowledge based, accumulative, humanity, survival alters cutlers and society, future oriented, observable, harmony to human life and nature, etc**

Relationship of engineering profession to basic science and technology; relationship to other professions

- Basically the basic science and technology used in an integrated form as a separate profession for the welfare of people is engineering. So we concluded engineering knowledge is not possible without basic science and technology.

- Basic science and technology includes physics, chemistry, mathematics and technology includes those in which the process or method of applying those describes how to become or how to make. Combining both of these subjects forms engineering subjects.

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Relationship of engineering profession to basic science and technology; relationship to other professions

- Engineering works involve large funds for creating facilities and services for the people. As the project involves budget and the people the engineer in charge and staff need to have good procedure of keeping record and rapport with stakeholders. Therefore engineering profession involves mainly the following profession, accountant, lawyers, medicals and managers.
- Engineering profession has a deep relation with law, account, medicine, and management profession. Auditing, budgeting, managing, conflicts and maintaining harmonies in work sphere.

engineering Ethics

- The importance of engineers in today's society is great and obvious.
- Therefore, the ethical issues they are dealing with and the decisions they make can influence the whole society and the discussion on ethics in engineering education is thus of big importance
- Ethics is something everybody learns to a certain level while growing up, during his/her whole education, at home etc. So when a person enters the higher level of education he/she already has some knowledge about ethics.
- The discussions on this Symposium were whether that knowledge is enough for young engineers.

Ethics in general,
presenting the current situation of courses on Ethics in their universities, talked about necessity of Ethics in Engineering education and the ways it should be implemented in educational system.
the discussions there have also been talks about cheating at school as an ethical issue.

General Knowledge on Ethics

In today's life, people learn about ethics all the time, being aware of it or not. The society, the religion, the family, the culture, the media, the traditions, everything has its influence. The awareness of ethics is on a very high level, but the level of knowledge of every person and every society is not the same. Also, common ethics are learned because of the factors mentioned above, but professional ethics are not.

It's needed to take into account the distinction between morals and ethics, ethics being the practical reflection of some morals. Morals are unconsciously learnt during childhood, but ethics are learnt at the time of confrontation with problems in life. Ethics as a field of study is universal, but the perception of ethical correctness differs in different cultures. Ethics are changing during the years because society is changing. Distinctions between personal and professional ethics also exist.

Ethics in Current Engineering Education

- Talking about the ethics in current university education there are different situations:

- Complete specific course on ethics.
- Integrated in some other courses – based on the will of the teachers or part of the program of the course.
- The students are not taught ethics at all.
- Even if ethics is taught in some universities, like in the first two cases, it can be problematic in some situations:
- The course is elective and not all the students are taking part because of the big number of courses they can choose.
- The material is extensively theoretical.
- Professors have no proper approach and make the course not attractive and tedious
- The methods that are used are inappropriate

Ethics in Engineering Education: is it necessary and why?

- The necessity of ethics in the engineering education was corroborated by the problems faced by engineers. They will be critical about all the information they will receive. Also they will be more confident when standing up for their own opinion, resisting outer pressure if needed. The critical thinking will be raised with a background on ethics that the engineers will have with this kind of courses. Thus, in every day situations, the dilemmas will be solved in a better way and the long-term consequences of engineering discoveries will be more carefully evaluated.
- Ethics also have an important role on the gaps that there are inevitably in laws and involve the
- responsibility of communicating with the society, of presenting, objectively, one person's own work.

Implementation of Ethics in Engineering Education

The idea of having a course on ethics as compulsory. More ideas on how the course should look like were presented:

- The course should give a direction of thinking that would make people more aware of their actions. By introducing a certain level of criticism, automatic behaviour would be excluded from decision making.
- Students generally would like to have interaction among all the students that enrolled the course and the teacher. It is a way through which more ideas could come up and more sharing could exist.
- The course should include: case studies, examples from real life, problem–solving methods.
- Although theory and definitions are not so attractive to students, they should exist.
- Optionally: the first contact with ethics should be before university, and it should be about general ethics and latter on professional ethics should be given at university.

Implementation of Ethics in Engineering Education

- Dynamic course: as the time is changing the material should also change. The technologies are changing, so the courses should take it into account.
- The course should represent a lot of examples from real life.
- About the person(s) who will give the course there were more ideas:
  - The person should have not just theoretical knowledge but also a practical background, the person should have experience as working as an engineer or as an option, special training on ethics.
  - Cooperation among two persons: engineer who will be practical and philosopher who will be theoretical.
- Having and not having grading:
  - The grading will be a reason for bigger interest and motivation during the course. The grade should not be based on classical exam, but on the activities during the time the course is rolling and a final project.
- There was not agreement if the course should be in the beginning or in the end of the studies:
  - In the beginning: The students will learn to act even in the beginning of their studies.
  - In the end: the course would be based on the final preparation of the engineer for his/her professional work.

Co nc lusio ns

There is a distinction between moral and ethics, as moral is something learned unconsciously and ethics is something learned by reflecting moral stands in a real world.

- Big need exist for engineers to understand ethical issues that will occur during their carrier, especially as engineers are the ones making the discoveries and they need to stimulate the consequences of those.
- Engineers have to stand up for their positions in ethically questionable cases.
- In different universities the way ethics is taught varies from specific ethical courses, ethics being part
- in some technical courses to not having any ethics taught to the students. In cases where ethics is taught
- there are some problems concerning competitiveness of teachers, and lack of practical examples.

Co nc lusio ns

- The goal of Ethical courses should be to promote critical thinking.
- They should be compulsory, dynamic and interactive (real cases, case studies and so on).
- The teachers should have theoretical knowledge but also practical and technical experience as engineers. there was no conclusion reached concerning when the ethical courses should be implemented (at the beginning of studies or at their end)
- Unethical behaviour during studies can effect future behaviour.
- How ever in many universities system of exams seems to promote or at least doesn't try to stop that kind of behaviour.
- So the system should change in order to make it unworthy to even try.

Introduction – Sustainable Development

- Sustainable development is development that meets the needs of the present without compromising
- the ability of future generations to meet their own needs. It is often referred as a way to ensure survival
- of the mankind taking into account, economy, environment and society.

- Sustainable Development is already very much part of curricula in some fields of engineering
- education (environmental engineering) but the question is concerning all other fields which are not directly
- connected to the concept of sustainable development.

- sustainable development in engineering, importance of it in engineering education, current situation and ways to improve it in future.

- engineers should be able to understand other professionals, such as lawyers, social scientist, other kinds of engineers and
- Sustainable Development in Engineering Education: if it is necessary,
- how should we implement it?

- The answer on this question is not evident and the opinions were not always the same.
- we would like to list several general accepted ideas that came up during the discussions together with the questions that are still open or there was no agreement for.
- the discussions did not agree whether that course should be theoretical or practical.
- At the end of the studies, applied courses are necessary and they should be different depending of the field of study.
- ●

Discussion on moral dilemma on decision making taking reference of laws of ethics

In every pace of life, ethical dilemma happens on decision making process.

Ethical dilemma happens on decision making process happens due to economic and social reasons for an institution and want or desire and duties for an individual.

Disposal of industrial waste to the river basin may fulfill industries desire or wants due to economic reasons but it harm the environment and society.

An individual do something to fulfill his wants or desire what he is not supposed to do.

Asphalt lay during rainy seasons and day after broken out almost.

Software model using crack version and cannot run properly.

Discussion on moral dilemma on decision making taking reference of laws of ethics

On the basis of moral value, society can distinguish the good and bad things. aim of manager need to create an ethically healthy climate for his or her employees, where they can do their work productively and confront a minimal degree or ambiguity regarding what constitutes right wrong behaviour.

The aim of ethics is to define the nature of the highest good of a man as a member of society.

Problems faced by a manager was examined in great detail to consider in detail the actual nature of the ethical dilemma in management and from that examination five conclusions were drawn concerning the complexity of managerial ethics.

Ethical problems in management are complex and ethical decisions have:

- Extended consequence
- Multiple alternative
- Mixed outcomes
- Uncertain consequences
- Personal implications

•Extended consequence:

• most ethical decision have extended consequences.

•The decisions of manager have an impact upon others; both within the organisaion and within society;

•that is beyond their control and therefore should be considered when the decisions are made.

•For example bribe (backhander) change governmental process, pollution affects environmental health, unsafe products destroy individual lives.

•Multiple alternatives:

•Most ethical decision decisions have multiple alternatives.

•Should a manager pay a bribe or not?

•Should a factory pollute the air or not?

• Should a company manufacture unsafe product or not?

•As has been seen in the simple illustration of bribery payments for import clearances.

•Multiple alternatives have to be considered in making ethical choices.

Mixed outcomes: **most ethical decisions have mixed outcomes. Ethical issues in management are considered antithetical (negating).**

Pay an indirect bribe, but maintain the sales volume of imported goods through prompt delivery.

Cause some air or water pollution, but avoid the cost of installing and operating pollution control equipment.

Design a slightly unsafe product, but reduce the material and labour costs of manufacture.

Social benefits and costs as well as financial revenues and expenses are associated with almost all of the alternatives in ethical choices

•Uncertain consequences:

- **Most ethical decisions have uncertain consequences.**
- **It is commonly thought that ethical issues in management are free of risk or doubt, with a known outcome for an alternative.**

•Pay the bribe, and receive the imported goods promptly. Investment in pollution control equipment, and the emission will be reduced X% at Y costs of operation.

•Produce an absolutely safe product at an additional costs Z dollars per unit. It is not all clear what consequence will follow from most ethical choices.

- Personal implications: Most ethical decisions have personal implication. It is commonly thought that ethical issues in management are largely impersonal. Many people believe that prima facie ethical decision in a given operation may reduce the profits of the company but not the executive's salaries or their opportunities for promotion. Maintain the sales of imported goods at expected levels, and despite slightly increased expenses for bribes, the quarterly review will be pleasant. Delay installation of pollution control equipment, and the rate of return will be close to the planed percentage. Redesign the product to reduce the material and labour cost, profit margin and chances of promotion will increase. Individual benefits and costs as well as financial social benefits and costs associated with most of the alternatives in ethical decisions

YOURSELF WHEN MAKING AN ETHICAL DECISION

10. Could the decision become habit forming?
If so, don't do it.
9. Is it legal?
If it isn't, don't do it.
8. Is it safe?
If it isn't, don't do it.
7. Is it the right thing to do?
If it isn't, don't do it.
6. Will this stand the test of public scrutiny?
If it won't, don't do it.
5. If something terrible were to happen, could I defend my actions?
If you can't, don't do it.

YOURSELF WHEN MAKING AN ETHICAL DECISION

4. Is it just, balanced, and fair?
If it isn't, don't do it.
3. How will it make me feel about myself?
If it's lousy, don't do it.
2. Does this choice lead to the greatest good for the greatest number?
If it doesn't, don't do it.
And the #1 question you should ask yourself when making an ethical decision:
1. Would I do this in front of my mother?
If you wouldn't, don't do it.

(Taylor, 1990)

- Seven sins by Mahatma Gandhi

1. **Wealth Without Work**
2. **Pleasure Without Conscience**
3. **Knowledge Without Character**
4. **Commerce (Business) Without Morality (Ethics)**
5. **Science Without Humanity**
6. **Religion Without Sacrifice**
7. **Politics Without Principle**

DUTIES/ LIABILITIES/ of designers or professional

1. Negligent, misstatement.
2. Statutes, bylaws, and standards
3. Examination of site above or below ground surface
4. Public and private rights
5. Plans. drawings/ specification
6. Suitability of materials
7. Suitability of Method of execution
8. Novel/ risky design and employers interference in design
9. Revision of design during execution

Concept of reasonable skill and care:

Every person who wants enter in to learned profession undertakes to bring to the exercise of it a reasonable degree of care and skill.

The degree of skill that required is the skill of an ordinary component person exercising that particular art.

Breach: failure to perform an obligation undertaken

Tort: civil mistake

Some times while performing engineering duties, engineers happen to harm or damage to other unconcerned, non related person or property.

The engineers perform jobs more attentively towards their client/ organisation/ employer but even doing so they happen to cause damages or harms to these who are not concerned to the jobs at all.

That happens because of unnecessary incidental negligence is doing jobs. Incidental negligence seeks compensations for the jobs.

This type of compensation to unconcerned parties/ property is tort liability.

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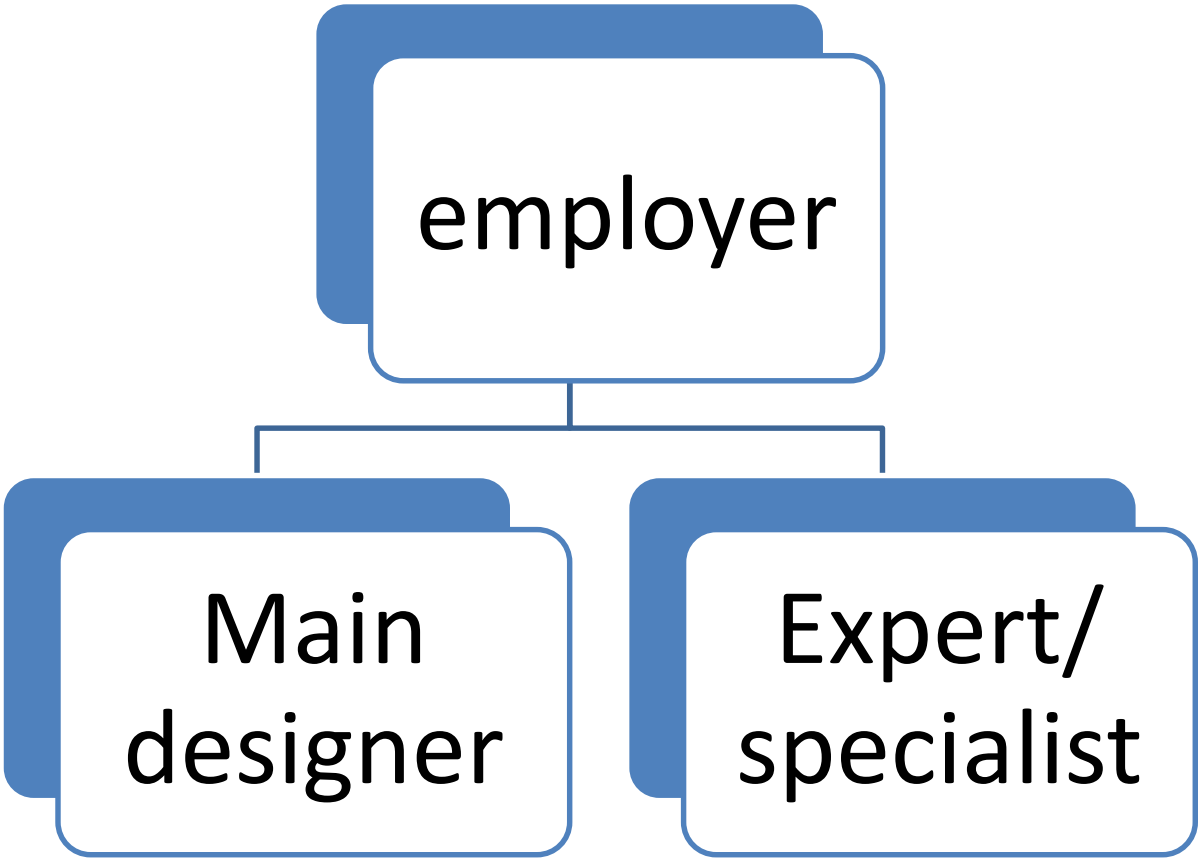
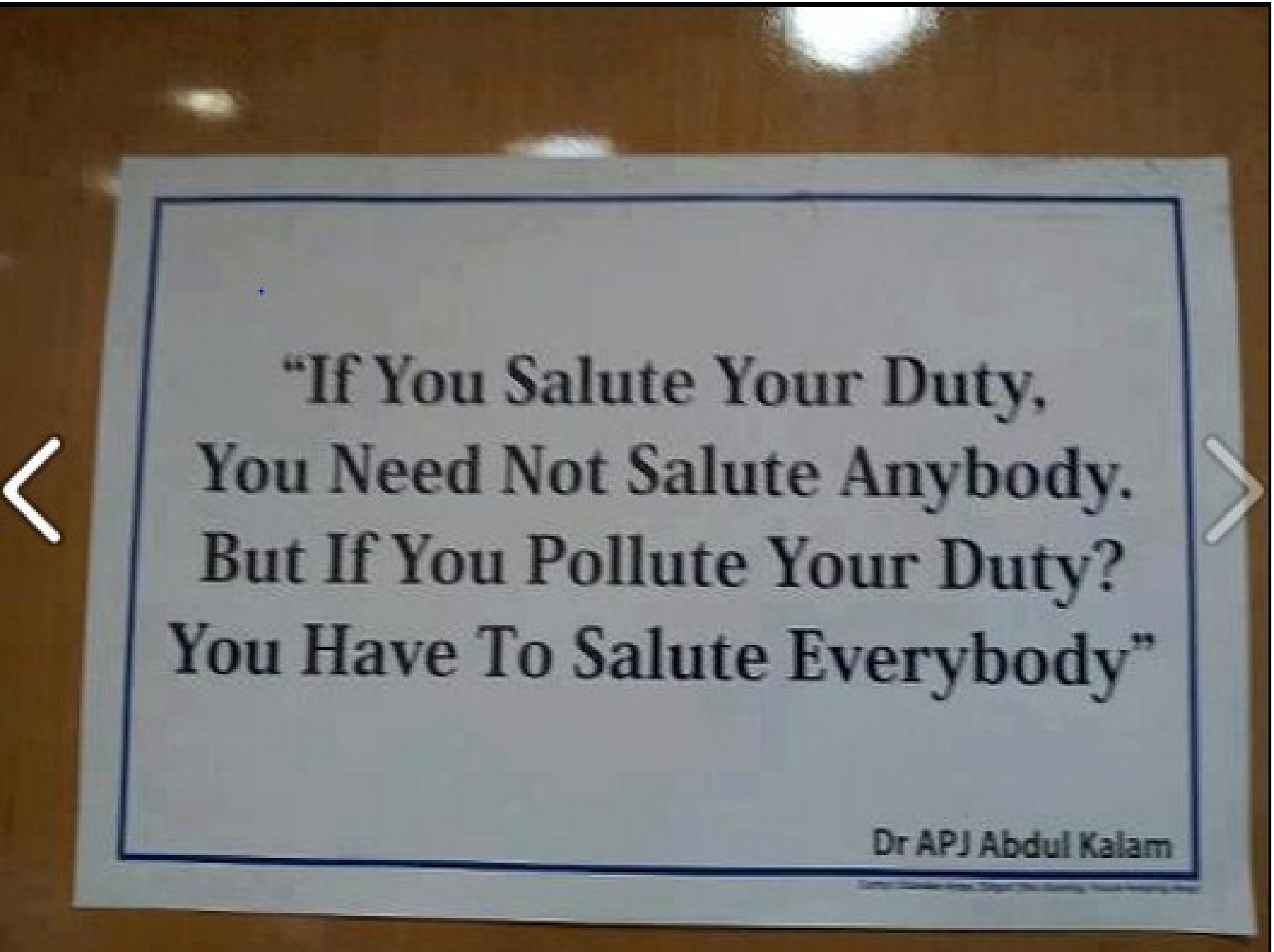
- Delegation of authority




"If You Salute Your Duty,
You Need Not Salute Anybody.
But If You Pollute Your Duty?
You Have To Salute Everybody"
Dr APJ Abdul Kalam

If you Salute your Duty,
You no need to Salute
Anybody,
But
If you pollute your
Duty, You have to
Salute Everybody
-Kalam