

# Engineering Professional Practice

(CVL 440)

## Chapter 2: Ethics and Professionalism

(3 hours)

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<http://nec.edu.np/faculty/hariks/Chap%201%20Lecture%20Notes%20Apr%202015.pdf>



Updated: August 12, 2017

## 2. Ethics and Professionalism

- 2.1 Moral, ethics and professionalism
- 2.2 Characteristics of ethical decision making
- 2.3 Liability of engineers in design, construction and implementation of projects
- 2.4 Loss of professionalism
- 2.5 Ethical issues in professional engineering in dealing with other professions (accounting, banking, law, journalism, and management)

लोकसेवाले गरेको नयाँ निर्णय अनुसार सहसचिवका लागि लिइने परीक्षामा सुरुमा लिखित परीक्षा हुनेछ र, यसमा दुई विषय राखिएको छ । पहिलो: पब्लिक गभर्नेन्स एण्ड डेभलपमेन्ट, दोस्रो: एकान्टिविलिटी, इथिक्स एण्ड प्रोफेसनलिजम ।

<http://www.onlinekhabar.com/2016/09/475012/#.V83L39zKjoo.facebook> , 6 Sept 2016

# 2.1 Moral, ethics and professionalism

## 2.1 a) Moral and non-moral actions:

- Moral measures the standard of good behavior by which people are judged. Engineering moral measures the standard of good behavior of engineers.
- Moral of a person is reflected by one's action when no one is watching, like anonymous donation and help without expectation.

**Non-moral actions:** Actions that are beyond the scope of moral or immoral actions. **Non-moral actions are not immoral actions.** The types of non-moral actions are:

- **events of nature**, because they cannot be controlled.
- **actions of animals** (except human) because they lack rationality. They can neither justify nor accept the consequences of their actions.
- **actions or behavior of children** and insane persons because they cannot foresee the consequences of their actions.
- **actions guided by the circumstances beyond control** such as coercion (case of *force majeure*).

# Technical examples of moral actions

- Any action conducted under moral conviction, ignoring benefit.
- Stopping profitable projects to save environmentally sensitive areas, endangered species.
- Attempting to stop activities which may result in high risk to workers/staff and local residents, at the risk of losing job.
- Whistle blowing: informing concerned authorities of activities which may result in high risk to workers and local residents, at the risk of losing job., when timely warnings are ignored.
- Going extra mile, doing more than what is normally expected, as per rule or norm, to ensure safety of workers and local residents, during impending accident, at the risk of his/her own life.
- Ignoring basic code of conduct, to prevent other's life during accident in a project, at the risk of his/her own life/job/legal hassle; when convinced that following the code word by word will put someone's life in danger.

# Technical examples of non-moral actions

- An infrastructure (road, bridge, tower, transmission lines, building, telephone connection, etc.) destroyed by natural events like an earthquake, flood, or landslide is a non-moral event. Beneficial natural events are also non-moral actions.
- A child (less than 14 years old) hacking website of a company is a non-moral event. A child cutting wire and causing short-circuit in electrical connection which resulted in fire is a non-moral event. Action of a child which is illegal for an adult to do.
- An elephant destroying buildings, wooden electrical-poles etc. is a non-moral event. If the same elephant does something which is beneficial for people, it is still a non-moral event.
- A resident engineer of a project forced to change alignment of a road, or an MIS engineer of an ISP or a social media site forced to reveal password of its clients, doctor forced to disclose patient's record, under threat of life, is a non-moral event.

## 2.1 b) Ethics

- Ethics is the study of standards of right and wrong; science and philosophy dealing with moral conduct, duty, and judgment. Ethics deals with voluntary actions specifically taken by an individual with sufficient knowledge of the options available.
- Ethics are well defined and in written form, generally. E.g. doctors and lawyers know what the ethics of their profession dictate. A doctor will never divulge patient's medical history to anyone other than the patient himself, unless authorized by the later, or required under law to do so. Similarly a lawyer will never compromise client's interest notwithstanding his own disposition towards his client.
- But morals are of a subliminal nature and deciding upon what constitutes them is not that easy. We know of moral dilemma, not an ethical one.
- Following ethics is therefore a relatively simple affair, after all it only involves a set of socially acceptable guidelines which benefit all.

# Difference between Ethics and Moral

1. Moral constitute a basic human marker of right conduct and behavior, the ethics is more like a set of guidelines that define accepted practices and behavior for a certain group of people.
  2. Ethics relates to a society or a profession where morality is related to an individual person.
  3. Ethics relate more in a professional life while morals are what individuals follow independently.
  4. “Morals are how you treat people you know. Ethics are how you treat people you don’t know” (Ian Welsh)
  5. Morals are the principles on which one’s judgments of right and wrong are based. Ethics are principles of right conduct.
  6. The morals are more abstract, subjective, and often personal or religion-based, while ethics are more practical, conceived as shared principles promoting fairness in social and business interactions.
- Moral values changes much more slowly than ethical values.

The Seven Social Sins are:

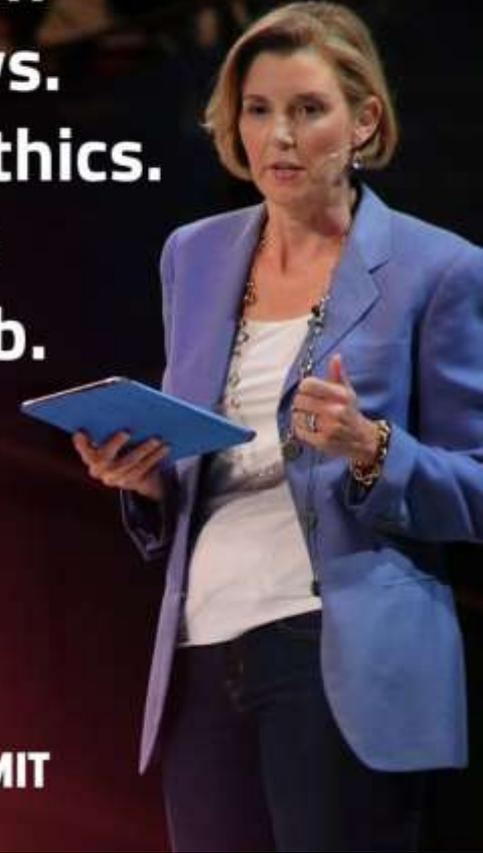
- Wealth without work.
- Pleasure without conscience.
- Knowledge without character.
- Commerce without morality.
- Science without humanity.
- Worship without sacrifice.
- Politics without principle.

-Frederick Lewis Donaldson

**If it comes down  
to your ethics vs.  
a job, choose ethics.  
You can always  
find another job.**

@SallieKrawcheck

 **THE GLOBAL  
LEADERSHIP SUMMIT**



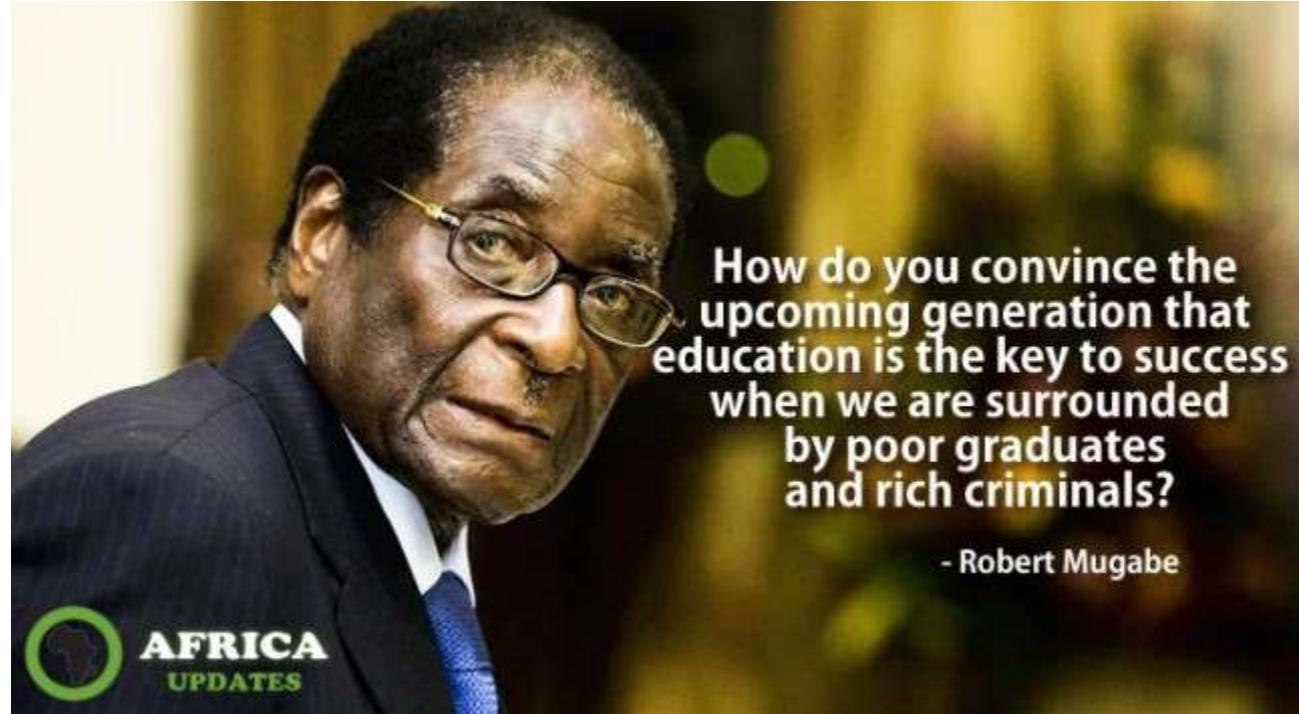
<https://www.facebook.com/wcagls/photos/a.345911699973.187847.302341909973/10153723236289974/?type=3&theater>

Engineers without ethics is more a burden and less an  
asset to a society.



## 2.1 c) Professionalism

- A profession is defined as having a systematic knowledge acquired through specialized training or education and practicing the same as an occupation. Professionals bear moral and ethical behavior.
- A profession means practice or application of such knowledge and skill that are acquired through a systematic study or training for the betterment of the society or people in the form of services.
- The content of a profession with moral and ethical behaviors is professionalism.



## 2.1c) Features of Professionalism

### **Some of the features of a professional person:**

- A professional acquires a systematic knowledge and skill through study, training and experience.
- A professional exercises the knowledge and enhance skill ethically as an expert. As such, professionals are endowed with specific rights/authority, like right to approve design, right to prescribe medicine, right to grade paper.
- The service or work as an expertise of a professional is evaluated by the public.
- Professionals follow code of conducts to keep morale of the profession high. The activities of a professional are regulated by the professional organizations through licensing, code of conducts, and disciplinary actions.
- Professionals have their own cultures, developed through mutual contacts in social and professional gatherings.

## 2.1 d) Examples of un-professional behavior of an engineer:

**Time related:** Late arrival in meetings/office/duty station, Late submission of reports/deliverables, i.e., missing deadlines

**Quality related:** Failing to monitor quality of works performed, Failing to detect apparent errors in drawings/designs/codes/software

**Meeting:** Talking on phone during meeting/ loud ring tones of cell phones, Talking with others during meeting, Late arrival, Taking frequent breaks, Any activity that indicates that the meeting is of less importance to you.

**Personal Integrity:** Hiding conflict of interest, Accepting extra offer from client/contractor, Disclosing client's confidential information, Inconsistency in saying and doing (hypocrite), Making judgment based on partial knowledge, like determining the brand of cement or steel rod or wire/transformer/turbine based on advertisement, rather than on test-data. Inability to detect (and correct) apparent flaws in drawings/designs, Inability to make appropriate judgment in a particular situation.

## 2.1 d) Examples of un-professional behavior of an engineer:

**Personal Manner:** Shouting at subordinates/workers, Sloppy dress up/attention grabbing hair style/ jewelry, Disrespect to others, especially to those who are less fortunate.

**Criminal offense:** Forging document, Falsifying data, Accepting/offering bribes, Abuse/misuse/disuse of authority: use of official property (vehicle, building, equipment) for personal purpose, asking office personnel to do personal works, Nepotism, Plagiarism, Plotting against firm, client, other engineers

**Code of Conduct:** Forgetting to sign on documents, Disregard for code of conduct, standards, bylaws, and norms, Advertisement in newspaper/TV/Radio, Part time work as a salesman, Attempt of undue influence, Intentionally misleading public, client, employer, Accepting offer from potential client/contractor

**Negligence:** Using different coefficients from engineering handbooks, without checking their applicability in particular conditions, Allowing breach of terms and conditions at construction sites, Not checking documents properly for formatting, contents, etc. before submission.



# UN imposes sanctions on NSET, its 3 officials

25 Feb 2017, The Kathmandu Post

<http://kathmandupost.ekantipur.com/news/2017-02-25/un-imposes-sanctions-on-nset-its-3-officials.html>



## 2.2 Characteristics of Ethical Decision Making

- Ethical decisions hold paramount the safety, health and welfare of the public, over financial profit.
- Ethical decisions uphold and enhance the honor, integrity and dignity of the profession,
- Ethical decisions uphold integrity
  - free from conflict of interest
  - Abide by all prevailing laws, rules, regulations
  - Follows guidelines, directives, bylaws, codes
  - Follows applicable codes of conduct
  - Fair, honest, transparent, aspires highest quality and open communication
- Ethical decisions reflect loyalty to client, organization, and society
- Respect: culture, social customs, practices, self respect of others, customer, environment
- Concern: Concern to the benefit of all stakeholders: Client, public, government, material suppliers, worker, contractor, consultant, funding agency

**Similar to Section 3.3**

## 2.3 Liabilities of engineers in project design, construction and implementation

### Three sources of liability:

- a) **Liabilities due to contract:** liable to fulfill all terms of contract; if there is no contract, legally, there is no liability under this category. An engineer is liable for loss of damage due to breach of contract clauses.
- b) **Liabilities due to criminal law:** liable to follow all prevailing laws of nation, breach of law related to design, construction and implementation of design can result in criminal case, whether there is damage or not.
- c) **Liabilities due to tort:** liable to prevent customers/users of products and services from loss or damage; even if there is no specific contract and no laws have been breached, an engineers can be held liable for loss or damage to the customer due to the use of services and products designed, constructed, or implemented by the engineer. Pre-information or pre-warning or disclaimer can prevent an engineer from liability due to tort.

### Two types of liability:

- a) **Vicarious Liability:** liable due to acts of staff of a company or contractor/ subcontractor of a company or project
  - i) **Control test:** degree of liability depends on level of control a company has on its staff or contractor
  - ii) **Business integration test:** degree of liability depends on level of business integration
  - iii) **Multiple test:** both the control test and business integration can be used to evaluate degree of liability.
- b) **Partnership Liability:** liability due to acts of partner(s)

## 2.3 Liabilities of engineers in project design, construction and implementation

### a) Liabilities of engineers in project design

- Fitness for purpose
- Negligent misstatement
- Statutes, bylaws and building regulations/codes
- Examination of site above and below the ground
- Public and private rights
- Plans, drawings and specifications
- Materials (quantity, quality and availability)
- Novel, risky design and employers' interference in design
- Revision of design during construction

**Details are in Chapter 4.**



# Liabilities of engineers in project construction and implementation

- Completion of project in time, within budget
- With quality: material, workmanship, method of construction
- Consistency: in quality, form
- Safety and welfare of project workers, people living in and around project area, and people travelling through or visiting the project area
- Follow applicable laws, rules, regulations, guidelines, conventions, codes and bylaws
- Meet social obligations

...engineer must struggle to design in such a way as to avoid failure, and, more importantly, catastrophic failure which could result in loss of property, damage to the environment of the user of that technology, and possibly injury or loss of life...

<http://www.matscieng.sunysb.edu/disaster/>

# समयमै काम पूरा नगरेपछि पप्पु कन्स्ट्रक्सनलाई एडिबीले तिरायो ५ करोड

साउन ६, २०७४ बाँके:

एसियाली विकास बैंक (एडिबी) ले जमुनहा-राँझा सडक खण्ड निर्माणको जिम्मा पाएको पप्पु कन्स्ट्रक्सन जेभीलाई ५ करोडभन्दा बढी रुपैयाँ हर्जाना तिराएको छ। सम्झौता अनुसारको काम समयमा पूरा नगरेपछि एसियाली विकास बैंकले पप्पु कन्स्ट्रक्सन जेभीलाई करिब ५ करोड ५० लाख रुपैयाँ हर्जाना तिराएको मध्यपश्चिम क्षेत्रीय सडक निर्देशनालय डिभिजन कार्यालय नेपालगन्जका डिभिजन प्रमुख अर्जुनकुमार बमले जानकारी दिए। 'हर्जाना लगाउनु भनेको कारबाही नै हो, यसले अन्य योजनाको ठेक्कापट्टामा पनि असर पार्न सक्छ,' उनले भने। उनले पप्पु कन्स्ट्रक्सनको ठेक्का जुलाई, २०१६ सम्म मात्र भएकोले अब पप्पु र एसियाली विकास बैंकबीच कुनै सम्बन्ध नरहेको बताए। पप्पुले ५७ करोड रुपैयाँमा राँझा-जमुनहा सडकखण्ड कालोपत्रे गर्ने ठेक्का लिएको थियो। मापदण्डअनुसार निर्माण नगरेको प्रमाणित भएपछि एसियाली विकास बैंकले उसलाई एक करोड रुपैयाँ मात्र दिने निर्णय गरेको थियो। हर्जानाबापतको रकम असुली हर्जाना बापतको रकम एडिबीले असुली गरिसकेको छ। काम गरेबापत उसले पाउने रुपैयाँ हर्जानामा कटाइएको छ। सडक निर्माणका लागि ठेक्का लिने क्रममा जम्मा गरेको रकम पनि राजस्व कार्यालयमा पठाइएको सडक डिभिजन कार्यालय नेपालगन्जले जनाएको छ। बाँकी रकम पिभिसीलगायत पप्पुको बैंक खाताबाट असुली गरिएको डिभिजन प्रमुख बमले बताए।

Read more at: <http://thahakhabar.com/news/20256>



## 2.4 Loss of Professionalism: causes

- 1. Low Self-esteem:** A person with low self-esteem finds excuses to compromise professionalism easily.
- 2. Low morale of the individual:** The upbringing of a person holding license to practice a profession is defective or against moral values and ethics of the profession, it results in low morale of the individual, and loss of professionalism. If the value of fairness and personal integrity are not inculcated during childhood of a person, such person normally ends up having low morale.
- 3. Defective social norms or values:** When society accepts low or unprofessional behavior, turns blind eye to unethically accumulated property, respects persons with criminal records, admires rule-breaker and mocks rule-followers, professionalism plummets.
- 4. Irregular, or inconsistent, application of laws and regulations:** If institutes like NEC, CIAA, line agencies or court apply the laws irregularly or selectively, the risk of indulging in unprofessional behavior becomes low and people lose their professionalism. When the penalty for law breaking is low compared to the gain from unprofessional action, people lose their professionalism.

## 2.4 Loss of Professionalism: causes

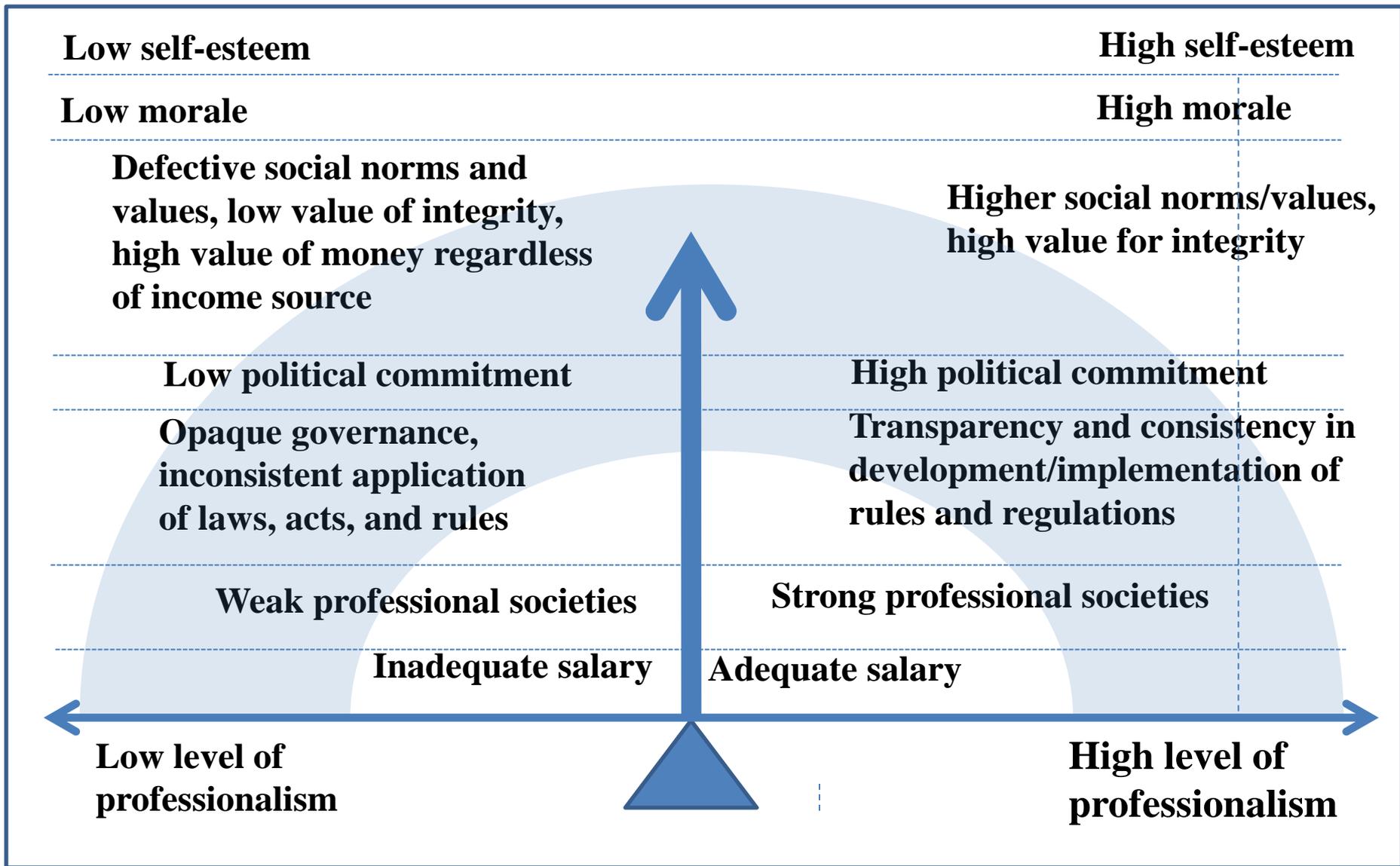
- 5. Lack of political commitment:** When national level political parties or government bodies are unwilling to take action law breakers or unprofessional activities, the level of professionalism in the society normally plunges.
- 6. Weak or negligent professional societies:** When professional societies like NEA, SCAEF, FCAN, are weak, or negligent, in taking disciplinary actions against its members who blatantly break its rules and guidelines, the members tend to neglect the code of conduct of such professional societies, resulting in loss of professionalism.
- 7. Inadequate salary:** When the salary is inadequate to fulfill the basic necessities of life (food, clothing, shelter, kid's education, sanitation, health) and/or when the salary level of a similarly trained person in a different profession is much higher, people tend to engage in unprofessional activities.

**'A bad system  
can destroy  
good people.'**

Gary Mottershead



**Sort the causes based on their importance;  
which is more important?**



**In a scale of 1 to 10, what should be the weightage of each parameter?**



## 2.5 Ethical Issues in professional engineering in dealing with other professions

- a) **Accounting:** when accountant expects approval of bill before work completed or before quality approved; unnecessary variation orders
- b) **Banking:** over valuation, project progress report, not evaluating parameters which may affect feasibility, not disclosing assumptions and associated risks
- c) **Law:** disclosing/hiding client's info, lying under oath, telling partial truth with ill intent, interfering in legal proceeding, making public comment on pending legal case
- d) **Journalism:** disclosing client's confidential info, provide statement without proof, data, temptation to be on mass media, appearing on interview on topics which are out of expertise
- e) **Management:** Loyalty to management, whistle blowing, witness protection, leaking of confidential data to government for public good, unfair treatment to subordinates.

**Chapter 2 Completed.**



# PPMO's Blacklisted Organization

Form/Company Name:	Duration	Type:	Status
<a href="#">श्री टौदह कन्स्ट्रक्सन</a>	2017-05-04 to 2020-05-03	Civil Works	Active
<a href="#">श्री ए पि सप्लायर्स</a>	2017-03-27 to 2020-03-26	Civil Works	Active
<a href="#">श्री टौदह कन्स्ट्रक्सन</a>	2017-03-27 to 2020-03-26	Civil Works	Active
<a href="#">श्री गोर्खा कन्स्ट्रक्सन प्रा.ली.</a>	2017-03-27 to 2020-03-26	Civil Works	Active
<a href="#">श्री बि.टी / सन्जिब एण्ड ब्रदर्स जे.भि.</a>	2017-03-22 to 2020-03-21	Civil Works	Suspend
<a href="#">श्री सन्जिब एण्ड ब्रदर्स कन्स्ट्रक्सन प्रा.ली.</a>	2017-03-22 to 2020-03-21	Civil Works	Suspend
<a href="#">श्री बन्डली निर्माण सेवा</a>	2017-02-17 to 2020-02-16	Civil Works	Active
<a href="#">श्री रियाना निर्माण सेवा</a>	2017-02-17 to 2020-02-16	Civil Works	Active
<a href="#">श्री उज्जैन कन्स्ट्रक्सन</a>	2016-12-24 to 2019-12-23	Civil Works	Active
<a href="#">श्री मकालु निर्माण सेवा</a>	2016-12-07 to 2019-12-06	Civil Works	Active
<a href="#">श्री श्रृङ्गलिला निर्माण सेवा प्रा.ली.</a>	2016-09-26 to 2019-09-25	Civil Works	Suspend
<a href="#">प्रकृति निर्माण सेवा एण्ड सप्लायर्स</a>	2016-09-26 to 2019-09-25	Civil Works	Active
<a href="#">श्री कमला निर्माण सेवा</a>	2016-07-27 to 2019-07-26	Civil Works	Suspend
<a href="#">श्री बि.एस कन्स्ट्रक्सन</a>	2016-07-27 to 2019-07-26	Civil Works	Active
<a href="#">श्री निशान निर्माण सेवा</a>	2016-07-27 to 2019-07-26	Civil Works	Active
<a href="#">श्री पि.पि निर्माण सेवा</a>	2016-07-27 to 2019-07-26	Civil Works	Active

**नेपाल इन्जिनियरिङ्ग परिषद्**  
**जाचबुक्त समितिको**  
**सूचना ।**

नेपाल इन्जिनियरिङ्ग परिषद् ऐन, २०५५ तथा ऐ.को नियमावली, २०५७ ले तोकेको मापदण्ड गणनी तपसिलका व्यक्तिहरूले B.E को मापदण्ड प्रमाणपत्र पेश गरी नेपाल इन्जिनियरिङ्ग परिषद्मा नाम दर्ता गराएको भन्ने उक्तको सम्बन्धमा यस परिषद्को जाचबुक्त समितिले जाचपत्र पेश गर्न अनुरोध गर्दै उक्तको सम्बन्धमा उल्लेखित व्यक्तिहरूलाई इन्जिनियरिङ्ग व्यवसाय गर्न दिइएको हामी भोगमा हुने वैधताकोने नेपाल इन्जिनियरिङ्ग परिषद् नियमावली २०५७ को नियम २३ बमोजिम २ महिनाका लागि निजहरूको नाम दर्ता परिषद्को दर्ता विज्ञापकट निम्नका गरिएको व्यहोरा सम्बन्धित व्यक्त, सघसंस्था र सघसंस्थाधारणको जानकारीको लागि को सूचना प्रकाशित गरिएको छ ।

तपसिल :

सि.नं.	नाम	दर्ता नं.	विषय
१	समत श्रेष्ठ	११८३९	सिभिल "क"
२	पुष्प राज शर्मा	११९७७	सिभिल "क"
३	कल्याण कुमार भन्ज	११९७८	सिभिल "क"
४	हितेश सिंह	११८३५	सिभिल "क"
५	पुजन कुमार खत्री	११८४०	सिभिल "क"
६	नमेश कोइराला	१२०२७	सिभिल "क"
७	योगेन्द्र बम	१२०२८	सिभिल "क"

## Chapter 2: Self Test

- How the moral and non moral action affects the quality of the work?
- Distinguish between moral and non-moral action with suitable examples.
- What do you mean by ethics and morale? What should be done to make the morale of an engineer high?
- What is your understanding of ethics and norms? How are they essential in developing healthy professionalism? Elaborate.
- Describe the factors affecting the morale of a professional?
- What is profession? Discuss the various factors that affect the morale of the profession.
- What are the characteristics of ethical decision making? Briefly discuss.
- Discuss the consequences of ethical decision making.
- What are the main features of a profession? “Do you think the morale of the professional will become low if they are paid inadequate salary? Explain.
- Define profession, professional and professionalism. Explain the feature of professionals.
- Define profession. Describe the characteristics of a profession?
- What do you understand by profession? State the features of a profession.
- How do you define moral and non-moral actions? Write the code of ethics for engineers.

