

Another Dimension to the Engineering Code of Ethics

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ABSTRACT: Another view for the code of ethics for engineers is being presented here. A review of the ethics and ethical code are followed by the need of having the code of ethics. Emphasis was given to the code of ethics for engineers due to the importance of the profession. A reference was given to the code of civil engineers as an example. A proposal to the update of the code of ethics of engineers is presented through four tracks. The responsibilities of the engineer towards the profession, the society, the fellow engineers and the customers are outlined and the continuous evaluation of engineers' work in the light of the code of ethics is highlighted.

KEYWORDS: Code of ethics, Engineering code of ethics, Societal, Religious.

I. INTRODUCTION

The subject of ethics and professional ethics is a subject that has a special taste and great importance, where ethics plays an important role in the lives of peoples from different races, in different locations, and even different philosophies they espouse. Ethics helps them to adapt to the reality of the society in which they live, and is a major driver in achieving trust, mutual assistance and justice in human relationships. Ethics is the most important principles and rules organizing human behavior, and the first pillar for the preservation of nations and societies. If these rules do not exist to a certain degree, it becomes realistically impossible for any activity to continue.

There is no doubt that ethics is reflected in the commitment of the individual to his profession, as the profession is the mean for the individual to achieve psychological and social compatibility. All societies – developed and underdeveloped - embrace many professions such as engineering, medicine, law, judiciary, media press, education, and other professions. Each profession adheres to an ethic that its owners believe in and cherish and act accordingly and work to consolidate and deepen it among those who belong to it, based on their belief in the profession's goals and roles that achieve the aspirations of society in modernization and advancement [1].

This, in turn, leads to several questions: What is ethics? What is the concept of the profession and what is the meaning of the ethics of the profession? Why do we care to inculcate the ethics of the engineering profession? What is the other dimension being needed here about the code of ethics for engineers? These and other questions are the subject topic of this article.

II. CONCEPTS AND TERMS

Ethics concept: Moral is by language is the standard of good or bad behavior, fairness, honesty, etc. that each person believes in, rather than to laws. Or it is a quality in each person with traumatic or reprehensible behavior [2].

Moral Concept as a stable quality, did not come or show by accident. Because a person may be dressed with some unstable or transient qualities for a particular situation, such as generosity, fear, anger, or otherwise, whereas in normal circumstances, the real qualities that may contradict these qualities will appear. This stable quality has behavioral effects, as behavior is not a moral, but behavior is the apparent part of the moral and its apparent effect; therefore, Islamic Sharia connects or judges on a person through his behavior. This is confirming what was said by the Prophet Mohamed PBUH; "If you see a man getting used to mosques, testify to him with faith" [3]. Hence, moral can be defined as: "the set of abstracted rules and principles to which a person is subjected in his actions, and he is called upon to evaluate his behavior, and to describe it as good or ugly behavior".

Career concept was defined as: "an organized actions in which a person is convinced and tries to advance through with specific job demands" [4]. Or it is "A high-quality professional work that requires some kind of technical capabilities that can be achieved through a special professional preparation that includes academic preparation and practical training. It differs from the concept of the craft, which is a manual work that the worker performs either in a workshop that he owns or in a workshop owned by another person or in an institution or company and does not need to be prepared in advance, but only through short training.

Professional ethics concept the term work ethics for an organization is based on the principles and moral values that represent the behavior of employees. Professional ethics in its entirety emerge from the general ethics that a person learned at the beginning of his life from the family, school, university, friends and society, as it is a statement of the values and principles that should guide the daily work that he does. So professional ethics means a mixture of good behaviors and ethics that a person develops or acquires and practices during the performance of his work, especially with regard to dealing with the surrounding audience (clients, auditors, students, patients or others). These professional ethics are imposed by the true value of the human being in a society that respects the human being. So, each profession has its own ethics, which has gradually formed and developed over time until it has been recognized and has become morally and legally accredited.

Accordingly, the concept of ethics in the engineering profession is: "A set of formal and informal standards of behavior that engineers use as a reference that guides their behavior during the performance of their functions, and used by management and society to judge the commitment of engineers."

The ethical code of the profession concept The professional ethical code is: "A document outlining the ethical and professional standards required for members of a professional association to follow". It is also known as the statement of the ideal standards for a profession adopted by a professional group or institution to direct its members to assume their professional responsibilities" [5].

III. WHY SHOULD WE CARE ABOUT INSTILLING ETHICS?

In Noble Qur'an, there are more than 100 situations that handles the profession or work, including:

God said in Quran: "Make me to the treasures of the earth that I am knowledgeable" [6], "It is better for the one who hires the faithful strong" [7]. We also find that the interest in the ethics of the profession stems from the concept of God Almighty saying "We sent the book to you to show everything, guidance, mercy, and good tidings for Muslims" [8], also in "Who, when they take a measure from people, take in full" [9].

Also this appears from the sayings of Prophet Mohamed Peace Be Upon Him (PBUH): "Whoever cheats, he is not from us" and "The honest and faithful merchant comes with the prophets, the righteous and the martyrs" [3], and "It was narrated from Abu Dharr that the Prophet said: "There are three to whom Allah will not speak on the Day of Resurrection, or look at them, or sanctify them, and theirs will be a painful torment." The Messenger of Allah repeated and Abu Dharr said: "May they be lost and doomed." He said: "The one who lets his garment hang beneath his ankles, a vendor who tries to sell his product by means of false oaths, and the one who reminds people of what he has given them" [10].

The Messenger of Allah (PBUH) passed a man who was selling grain. He asked him: How are you selling? He informed him. Revelation them came down to him saying: "Put your hand into it." So he put his hand into it, and felt that it was damp. The Messenger of Allah (PBUH) then said: "He who deceives has nothing to do with us [3]".

Allah's Messenger (PBUH) said: "None withholds goods till the price rises but a sinner" [10].

It is noted from the above verses and sayings of the Prophet that Islam has taken a major professional ethical interest in the moral code as being a religious duty, a professional imperative, and a humanitarian requirement.

As currently, work ethics have been of great interest, and it appears clear that institutions are racing to issue ethical codes for the profession, especially the engineering profession. All of this draws a wide question mark on the horizon, which explains why all this interest in the professional ethical code in general and engineering in particular? The answer lies in several reasons, including:

- (1) The important role that ethical values related to professional practice play in improving the worker's performance and investment of his time in an optimal manner and his endeavor to achieve the best return for society in a manner consistent with the stages of its development and progress and is consistent with the system of values that the individual holds towards himself and towards society.
- (2) A series of dangerous structural collapses that included dramatic bridge collapses, notably the Molasses Boston flood disaster (1919), the railroad catastrophe of the Ashtabula River (1876), the Tay Bridge disaster (1879), and the Quebec Bridge collapse (1907), the Nuclear Plant Explosion in Chernobyl (1986) and the Disaster of The Space Shuttle Challenger (1986). The direct cause of morality was the failure of ethics to practice the engineering profession and because it was viewed as a personal quality rather than a major professional interest.
- (3) Immunizing society against corruption and providing effective mechanisms to address its effects through developing professional behavior among workers as an appropriate entry point to reduce negative phenomena. Access to build an integrity system in public work is the primary goal in building effective

- public institutions that respect employees through a system of ethical values and behaviors, and to know how to deal with negative behavior.
- (4) Achieving high efficiency in performance and enabling the participants to formulate values for positive interaction and support those values in administrative practices in a way that helps to cope with the various transformations and the spirit of the new era that is in effect in most countries.
 - (5) Create a positive and stimulating organizational work environment that makes loyalty as behavioral exercise for workers.
 - (6) The group of professions in a society is the tool that implements the goals and aspirations of the people, and if workers in various disciplines and sectors lose the ethics and performance ethics, the inevitable result will be failure and backwardness.
 - (7) Commitment to work ethics contributes to improving society in general, where unfair practices will be less, people will enjoy equal opportunities, and every person reaps the fruits of his effort, or he receives a penalty for his shortcomings, and assigns works to the most efficient, knowledgeable, and creatively oriented, and directs resources to what is most beneficial, and tightens the screws on the fraudsters and opportunists. It also expands opportunities for hardworking individuals. All this is achieved if everyone is committed to morality.
 - (8) Commitment to the ethical code of the profession contributes to supporting social satisfaction and stability among the majority of people, whereby everyone who has a right obtains his right and justice prevails in transactions, contracts, attribution and distribution of wealth etc. All this makes the majority of people in a state of satisfaction and stability.
 - (9) Provides an environment full of team spirit and increased productivity, which benefits everyone.
 - (10) Increasing an individual's self-confidence and confidence in the organization and society, and reduces anxiety and tension between individuals.
 - (11) Reduces the exposure of institutions to the high risk as violations, crimes and disputes will be reduced; where everyone will adhere to the law, which is first and foremost an ethical value.
 - (12) Adherence to strict ethical codes encourages society to deal only with ethically committed entities, and thus good practices succeed in driving out bad practices.
 - (13) The existence of declared moral covenants provides the reference that people need to decide for appropriate behavior or to judge the behavior that actually occurred.

Accordingly, and for all of these benefits, Islam took the interest in the moral aspect, and set ethical values and rules for every aspect of life. Alongside, engineering institutions and societies started in planting ethics and professional ethics. Old examples include when the Canadian Iron Ring and the Charter of the American Engineer - dating back to the collapse of the Quebec Bridge in (1907) – requested their members to swear to maintain ethical practice and to wear a symbolic ring as a reminder to them.

There was also a response to the development of formal regulations for ethics rules by three of the four major engineering institutions where the American Society of Electrical Engineers adopted the development of their own ethics rules in (1912) and the American Society of Civil Engineers and the American Society of Mechanical Engineers also did so in (1914). Furthermore, the International Society of Professional Engineers in the United States also issued the Code of Engineering Ethics and Provisions of Professional Behavior in (1946), which evolved into the current rules of conduct followed in (1964). These results ultimately led to the establishment of the Ethical Follow-up Council (BER) in (1954 AD). Ethical issues have rarely found easy responses, but the Ethical Follow-up Council with its 500 advisors has helped to clarify ethical issues which engineers face daily. This led to any professional societies and business groups around the world to address bribery and political corruption.

Therefore, if professional ethics is a necessity for every individual working in a profession, it is more important and necessary for those who work in the engineering profession due to the seriousness of this profession, which aims at the safety, health and welfare of society. This requires a professional ethical constitution or charter whose members are obligated to apply it in their daily behavior, which is called a profession ethical code.

Therefore, what is the nature of the ethical code for the engineering profession? What are its characteristics and principles? This is the subject of the following section.

IV. THE ETHICAL CODE OF THE ENGINEERING PROFESSION

The engineering profession is one of the most sensitive and most dangerous professions due to its direct and indirect connection with all aspects of human life, and its significant contribution to civilizational progress, protection and harnessing natural resources to serve the community and raise the standard of living. In addition to that the moral error in it is catastrophic as it is said that "the error Moral in any profession other than engineering may lead to the death of a person while moral error in engineering profession may lead to the death of many

people". So it was necessary for engineers to provide their professional services in accordance with ethical rules and standards that envision their commitment to society and to their clients and their profession, which is called the "ethical code of the profession". Statistics indicate that quite a few efforts have been made in adopting covenants for the engineer's profession, as engineering bodies, systems and societies in a number of countries of the world have made many attempts to define the ethics of the engineer's profession. Examples include: "International Society of Professional Engineers", "Professional Engineers of Ontario", The American Society of Mechanical Engineers, the Institute of Industrial Engineers, the American Institute of Chemistry Engineers, the American Nuclear Society, the Saudi Council of Engineers, and the Egyptian Society of Engineers, etc. It turned out that every organization and engineering society in the world has codes and regulations governing ethics. It is noticed that these different engineering societies and organizations in the world are very similar in principle in the codes organizing ethics, which work to spread the codes more and work to issue specific directives. Here is an example from the Code of the American Society of Civil Engineers:

- Engineers raise safety, health, and community welfare as they strive to comply with the principles of sustainable development in the performance of their profession duties.
- Engineers only provide services that are at the core of their specialty.
- Engineers only make statements that are committed to honesty and objectivity.
- Engineers play an active role in the professional affairs of both the employee and the client as loyal or faithful agents and strive to avoid conflicts of interest.
- Engineers are keen to build their professional reputation due to their services and do not compete with others injustice.
- Engineers behave in a way that makes them possess the glory, integrity and dignity of the engineering profession, just as they behave with no pity for bribery, fraud and corruption.
- Engineers increase professional development during their work, and provide career development opportunities for those under their supervision.

V. PROPOSED ETHICAL CODE FOR THE PROFESSION OF ENGINEERS:

From this standpoint, an ethical code can be proposed for the profession of engineers based on several tracks, as follows:

(A) The first track: General Characteristics of the Moral Code

This ethical code must be of a special nature and certain advantages, including:

- Abstracted
- Ease and clarity
- Positive and inclusive
- Reasonability and acceptability in practice.
- It clarifies all professional obligations before colleagues of the same profession, the profession itself, its affiliated institutions, its beneficiaries, the state, and the community.
- Provide ethical rules that include behavioral standards.
- Flexibility of rules in front of new situations and crises.

(B) The second track: The Competencies that should be available in the Engineer

The engineer is a responsible person who performs his duties with initial conviction, linking his possession of science and technology with activating it within the society, and he is also an effective element within the society and aims to develop the society and promote it economically, and then he must demonstrate his creative and design capabilities and general ethics with a set of attributes and capabilities like:

- 1- To be always respectful of the views and positions of his fellow engineers, and to have the skills to work in a team spirit and build an integrated personality and even training, in accordance with the spirit of justice and fairness without discrimination or prejudice and to accept professional opinions and scientific technical criticism and to lead and influence in and be affected with others.
- 2- To enjoy the status of belonging to his community and country, he always seeks to achieve good results through his dependence on the available means and by adopting the human, economic, social and environmental dimensions, and takes into account all the negatives that prevent the realization of his tasks, especially those that are mainly related to the areas of health, security and the environment.
- 3- He should have the ability to incorporate all legitimate interests, which he is responsible for taking into account in the context of his analyzes and readings, and thus taking into account all the consequences arising from them, which can have an impact on people and property.
- 4- He should high communication skills, which enables him to identify all the surrounding factors that affect and are affected by the nature of his work, and he must know that these skills may be equal to technical skills.

- 5- His professional behavior should be characterized by upholding human rights and respecting different beliefs and cultures, and not to distinguish between those dealing with him on the basis of origin, religion, sex, color, age or disability.

(C) The third track: The responsibilities of the engineer

There are responsibilities and duties that the engineer must adhere to, first towards his Lord and Creator, and towards himself and his profession, his co-workers, his clients and beneficiaries, as well as towards officials and society in general, including:

Since the cornerstone of professional behavior is integrity, the engineer must perform his profession with sincerity to the public and his employees and customers with integrity for all and it is his duty to take care of the public interest and be ready to use his talents and knowledge for the benefit of humankind as he must enhance the honor of his profession and dignity and avoid participation in questionable projects. He must be tolerant and fair in his treatment with his colleagues.

Accordingly, the responsibilities, rules and ethics of practicing the engineering profession that an engineer must follow during the exercise of his job and can be divided as follows:

(i) The engineer's responsibilities towards the engineering profession

- (a) The engineer should help to increase the elements of the engineering profession by exchanging information and experiences with other engineers and to cooperate with associations of engineers, and engineering scientific publications.
- (b) The engineer should not announce his work and features to attract praise for himself, and he should avoid everything that would harm the reputation and honor of the profession.
- (c) The engineer must maintain his dignity, distance himself from everything that marred his self-standing and professional reputation, and place the dignity and honor of the profession above personal gain and personal considerations.
- (d) The engineer must emphasize and enhance in his professional and personal performance the supreme value of the engineering profession, and its essential role in building contemporary civilization, and strive to uplift its prestige and prestige.
- (e) The engineer should practice the engineering profession from a broad social perspective, based on his specialized experience, committed to the ethics of the profession regardless of his intellectual or belief affiliation. He should not be distinguished in his treatment of others on the basis of race, gender or religion, but rather treat them all on the basis that they are equal in rights and duties and in the opportunities available.
- (f) When negotiating business contracts, the engineer must not make concessions that affect proper professional performance, or affect the dignity of the engineering profession.
- (g) The engineer must be discharged by himself from performing any work that does not conform to the common law and established social norms, or in contrary to the principles of ethics and honor of the engineering profession. He also has to make sure that those who represent him or work for him are committed in their behavior to these principles.
- (h) The engineer must indicate from the beginning all the consequences of his professional performance and the performance of those working with him, and be prepared to assume responsibility for these results.
- (i) The engineer must abide by the principles recommended by international organizations, such as providing insurance for business, regulating the use of employment, and guaranteeing human rights.
- (j) The engineer should not impose engineering solutions fit for one society on another, as these solutions may be inappropriate or may involve unjustified social and economic costs.
- (k) The engineer should work to spread engineering awareness among members of society, and spare no effort in introducing society to the profession of engineering and its accomplishments in its various fields, and its civilized role in building the present and the future, so that it will be appreciated and respected by the homeland and citizens.
- (l) The engineer should propose new horizons in the engineering work, support the professions, arts and industries integrated with the engineering profession, and upgrade them in terms of product quality and the technical level of the workers in them.
- (m) The engineer should contribute to the activities of the scientific and professional engineering societies and support them in achieving their goals, and abide by the regulations, decisions and recommendations decided upon by these societies. In addition to fruitful and constructive cooperation with the corresponding societies in other countries, and participation in the existing international federations of these societies with the aim of raising the level of their performance at the local, regional and global levels.
- (n) The engineer should strive to expand his knowledge, develop his skills, try to achieve the highest degree of professional excellence, and raise the level of his technical performance and apply the results of scientific

research and modern technologies up to date in his field of specialization, and he must also exchange information and experiences with fellow engineers of the same specialty. He should have continuous direct contact with scientific bodies, societies and engineering research centers and participating in their activities.

(ii) The engineer's responsibilities towards society

The engineering performance aims to provide a safe and comfortable life for a prosperous society in a distinct urban environment. The engineer cannot fully perform his engineering duties except with full awareness of the interest of his community with all its individuals and their differences. He should also have a wide knowledge of the challenges facing him, in order to advance to the ranks of developed countries. Therefore, he must:

- (a) Be fully aware of the importance of his role in the sustainable and comprehensive development of his society.
- (b) Put his scientific and practical experiences unconditionally to serve the community in all its parts and spectra, and to be certain that the primary goal of providing engineering services is to provide a safe, healthy and comfortable life for all members of society.
- (c) Realize that the interest of society is above any other consideration, and that the public interest is above self and personal interest.
- (d) Have immediate response in the event of a disaster, and put all his capabilities and expertise at the disposal of those responsible for managing these disasters.
- (e) Use his engineering information and professional knowledge to enrich the public debate on national, societal and urban issues, provided that the data he provides to public opinion in this regard are objective, honest, easy and clear.
- (f) Seek, with his knowledge, values, and faith in the truth, to establish the noble principles, and to contribute and build the collective conscience and creation of his society.

(iii) The engineer's responsibilities towards his fellow engineers

The engineer's relationship with the engineering community, and his fellow engineers, is one of the main pillars of engineering practice. This relationship is characterized by cooperation on one hand and competition on the other. So he must:

- (a) Be fair in his dealings with other colleagues, and to abide in his treatment of them in accordance with the traditions of the profession and the rules of decency, and not to spare any effort in their assistance and support whenever the need arises.
- (b) Not to harm his colleagues by using dishonest and indirect methods, directly or indirectly, which negatively affects their rights and legitimate opportunities in their professional practice.
- (c) In case of competition with other engineers; the competition must be based on professional merit and competence, and that he must avoid using any dishonest and unfair means.
- (d) In the event that a colleague practices inconsistent act which conflict with the ethics and the ethics of the engineering profession or does not comply with the laws and regulations which regulate this profession, he must inform the competent authorities, and provide evidence for that in order to take the necessary actions in this regard.
- (e) If the work of other engineers is to be evaluated, he must evaluate their work at the same standards that he would like others to evaluate his work.
- (f) Not to criticize the work of other engineers in a subjective and unfair manner; in order to reduce their importance and stop contracting and dealing with them.
- (g) Not to accept a work that another engineer previously associated with unless he has known all the circumstances of this work, and to verify that his acceptance to do it does not constitute harm to the legitimate rights of this engineer, nor does it contradict the ethical rules of conduct mentioned in this code.
- (h) Not to seek in any way to remove another engineer in order to replace him in a project or work of what was contracted with this engineer.
- (i) To provide to his colleagues and the employees who work for him the appropriate conditions for practicing the profession, and to provide them with the necessary atmosphere to highlight their talents and develop their competencies and do their utmost to continuously improve their technical and professional level, and to feel that this performance is appreciated and recognized, and to pay them fair remunerative wages and rewards.

(iv) The engineer's responsibilities towards customers

The relationship of the engineer with his customers is the most important pillar in the practice of the engineering profession, as they represent the other parties to the contract in the performance of engineering work. The mutual trust between these parties is the only guarantee that the engineering work will be successful and complete. So he must:

- (a) All transactions between his clients and him are characterized by frankness, honesty and transparency, while avoiding any reasons that may arise and affect the trust between them and lead to their loss.
- (b) The engineer must be open and honest in his relations with his clients, and provide them with his professional services with all competence and skill, and in their agreed dates.
- (c) If the actions of clients could represent a real - or potential - harm to others or is inconsistent with the public interest; he should exhaust all means to dissuade them from doing so before he declines his responsibilities towards them.
- (d) To commit to impartiality and objectivity with all contracting parties to implement engineering projects "clients, contractors and suppliers", and to take his decisions in this regard with complete independence from any of the contracting parties, and that these decisions are based only on his experience, wisdom and sound professional appreciation.
- (e) If he has a business relationship or financial interest - direct or indirect - that may negatively affect his decisions, judgments and professional performance; he should inform the customer of the nature of this relationship, and in the event that the client objects to it, the engineer must terminate this relationship or waive his assignment to perform the required workers.
- (f) Not to accept actions that represent a conflict of interest between clients and the public interest of society.
- (g) Notify clients of the development of projects in their various stages and not making any changes to the project without the consent of the client.
- (h) Not to disclose data, facts or information available to him by virtue of his professional practice without obtaining the prior approval of his clients, and he excludes from the above the necessary cases that result in harm to the public interest.

(D) The fourth track: evaluation and professional supervision

Work evaluation is an integral part of the production process in a profession, and a basis of its constituents, and accompanies it in all its stages. Evaluation is also used as an enhancement for the performance of individuals and finding motivations for more work and production through good employment of feedback.

The idea of job evaluation in the professions has emerged from the time when the relations between the employer and the worker developed and evolved with the values of the industrial revolution in the nineteenth century and the emergence of the movement of modern scientific management.

Work evaluation reflections on the ethics of the profession of engineer:

- Establishing a general policy for paying wages according to a fair system, according to the type and amount of responsibilities and duties.
- Helps with professional security between management and individuals.
- Lay the foundations of transportation and promotion in the institution.
- It helps clarify the type and value of each job, its powers, responsibilities and duties.
- Each organization depends on setting a special job evaluation program by:
- Evaluating the performance of individuals (in the sense of arranging them in ascending or descending order according to their ability, experience and personal habits, meaning that it is a way to measure the ability of individuals).
- Job evaluation (which is a way to study the degree of difficulty in exercising or performing jobs).

VI. CONCLUSIONS

- 1- The concern for work ethics is an ethical, religious and administrative matter, so the topic of ethics is a very important topic that must be focused on and taken care of as a comprehensive system in order for it to be rooted in the individual, family, work and society so that it will bear fruit on everyone.
- 2- The professional conscience is a collective response as much as it is an individual watchdog and is based on the constant aspiration to work sincerity and mastery in a social milieu. The ethics and ethics of the profession is something that should be presented, considering that the group of professions in society is the instrument that implements the goals and aspirations of the public. If workers in the various disciplines and sectors lose their ethics and performance ethics, the inevitable result will be failure and backwardness. This requires the imperative of ethics for these different professions. Indeed, not only the profession of engineering is one of these professions, but it is most in need because of its seriousness and intensity of sensitivity.
- 3- The adoption of a professional ethical code for engineering has become a necessity and a prerequisite for the advancement of the engineering profession, since the drafting of a charter for the profession of engineering and disseminating it among the practitioners is undoubtedly a critical step on the road to advancement, progress and advancement.

- 4- Adherence to principles and ethical behavior, whether at the level of the individual, or the group, or institutions and organizations of various activities is of great importance to different segments of society, as this matter strengthens commitment to the principles of correct and honest work.
- 5- Initially, competence was the only center of concern at the professional level, ethics became the main concern, as it was noticed in recent years that society was interested in the issue of fighting administrative corruption as well as the issue of transparency and safety of procedures in all state institutions and the private sector, and the development of professional behavior among its employees as an appropriate approach to reduce negative phenomena, enabling them to immunize society against corruption and provide effective mechanisms to address its effects. Then the goals and policies were reformulated in a manner that underscored moral responsibility.

Recommendations

Based on the presented objectives and discussion, the following is recommended:

(1) To teach the professional ethics in educational curricula along with academic knowledge, both of which are indispensable to the other, so any profession must include in its study plan two aspects:

A) An occupational aspect: It is concerned with the scientific subject used in work after graduation in a manner that develops a method of distinguished engineering thinking.

B) An ethical aspect: It is concerned with the ethics of the profession and how to behave in many unprofessional situations that the engineer faces during his studies and during his life after graduation and does not find a solution in engineering scientific subjects as the primary goal of the engineering profession is to solve people's problems and raise their standard of living.

(2) The code of ethics and behaviors of the practice should be within the knowledge and culture of the practicing engineer, and the various actors involved in "designing, developing, executing, decision-making" engineering work, and others.

(3) The need to consider ethical considerations besides competence, this is a very important matter in the practical and social life, and this meaning is reflected in the story of Prophet Joseph, peace be upon him, when he said to the ruler of Egypt, " [Joseph] said, "Appoint me over the storehouses of the land. Indeed, I will be a knowing guardian" [6].

In that situation, Egypt was going through a famine for a period of seven years, so he asked for this job For two considerations: an ethical consideration of "guardian", that is, he shall preserves the trust and a professional consideration, "knowing" knows how to do this work. This was also evident in the situation of Prophet "Moses" peace be upon him, with "Old man of Median and his daughters" when one of them suggested to her father saying, "O my father, hire him. Indeed, the best one you can hire is the strong and the trustworthy" [7].

Some professions have already taken this consideration into account, as they are concerned with the moral side with the same degree of interest as the professional side, for example: the only party that did not forgive "Bill Clinton" for his scandal is the Bar Association; because he committed the largest crime that a law practitioner could commit, which is "lying" under oath, and his punishment was to deprive him five years of practicing law !!

This situation and its like are often experienced in our daily life, for example:

If you are in a situation that prompted you to seek the assistance of a lawyer in a case, and you know a lawyer who is very efficient but is known to be weak conscientious and ethical in the sense that he can sell your case papers if he was paid an amount of money. Will you rely on efficiency considerations and go to that lawyer, or will you take the ethical side into account and divert your view from using him ??!

(4) Awareness of the size and type of the ethical effects of behavior is not sufficient to create the ethical environment for any institution, but awareness must evolve into commitment. In other words, the moral obligation accompanies the moral awareness we achieve. What is required is that there is a moral obligation at the individual level and at the group level, so the engineer accepts and assumes his responsibility regarding his ethics as an individual, and on the ethics of the institution as a whole.

(5) Work should be taken to follow the effectiveness of the code in practice, and the extent of awareness and commitment to it and its application, development and updating in light of following up on the implementation results.

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