UNIT – V
GLOBAL ISSUES

Syllabus:

Multinational Corporations – Environmental Ethics – Computer Ethics – Weapons Development – Engineers as Managers – Consulting Engineers – Engineers as Expert Witnesses and Advisors – Moral Leadership –Code of Conduct – Corporate Social Responsibility

MULTINATIONAL CORPORATIONS

A multinational corporation (MNC), also called a transnational corporation (TNC), or multinational enterprise (MNE), is a corporation or an enterprise that manages production or delivers services in more than one country. It can also be referred to as an international corporation. The International Labour Organization (ILO) has defined[citation needed] an MNC as a corporation that has its management headquarters in one country, known as the home country, and operates in several other countries, known as host countries.

The Dutch East India Company was the first multinational corporation in the world and the first company to issue stock. It was also arguably the world's first megacorporation, possessing quasi-governmental powers, including the ability to wage war, negotiate treaties, coin money, and establish colonies.

The first modern multinational corporation is generally thought to be the East India Company. Many corporations have offices, branches or manufacturing plants in different countries from where their original and main headquarters is located.

Some multinational corporations are very big, with budgets that exceed some nations' GDPs. Multinational corporations can have a powerful influence in local economies, and even the world economy, and play an important role in international relations and globalization

Multinational corporations have played an important role in globalization. Countries and sometimes subnational regions must compete against one another for the establishment of

MNC facilities, and the subsequent tax revenue, employment, and economic activity. To compete, countries and regional political districts sometimes offer incentives to MNCs such as tax breaks, pledges of governmental assistance or improved infrastructure, or lax environmental and labor standards enforcement. This process of becoming more attractive to foreign investment can be characterized as a race to the bottom, a push towards greater autonomy for corporate bodies, or both.

However, some scholars for instance the Columbia economist Jagdish Bhagwati, have argued that multinationals are engaged in a 'race to the top.' While multinationals certainly regard a low tax burden or low labor costs as an element of comparative advantage, there is no evidence to suggest that MNCs deliberately avail themselves of lax environmental regulation or poor labour standards. As Bhagwati has pointed out, MNC profits are tied to operational efficiency, which includes a high degree of standardisation. Thus, MNCs are likely to tailor production processes in all of their operations in conformity to those jurisdictions where they operate (which will almost always include one or more of the US, Japan or EU) that has the most rigorous standards. As for labor costs, while MNCs clearly pay workers in, e.g. Vietnam, much less than they would in the US (though it is worth noting that higher American productivity—linked to technology—means that any comparison is tricky, since in America the same company would probably hire far fewer people and automate whatever process they performed in Vietnam with manual labour), it is also the case that they tend to pay a premium of between 10% and 100% on local labor rates.[10] Finally, depending on the nature of the MNC, investment in any country reflects a desire for a long-term return. Costs associated with establishing plant, training workers, etc., can be very high; once established in a jurisdiction, therefore, many MNCs are quite vulnerable to predatory practices such as, e.g., expropriation, sudden contract renegotiation, the arbitrary withdrawal or compulsory purchase of unnecessary 'licenses,' etc. Thus, both the negotiating power of MNCs and the supposed 'race to the bottom' may be overstated, while the substantial benefits that MNCs bring (tax revenues aside) are often understated

Market withdrawal

Because of their size, multinationals can have a significant impact on government policy, primarily through the threat of market withdrawal. For example, in an effort to reduce health care costs, some countries have tried to force pharmaceutical companies to license their patented drugs to local competitors for a very low fee, thereby artificially lowering the price. When faced with that threat, multinational pharmaceutical firms have simply withdrawn from the market, which often leads to limited availability of advanced drugs. In these cases, governments have been forced to back down from their efforts. Similar corporate and government confrontations have occurred when governments tried to force MNCs to make their intellectual property public in an effort to gain technology for local entrepreneurs. When companies are faced with the option of losing a core competitive technological advantage or withdrawing from a national market, they may choose the latter. This withdrawal often causes governments to change policy. Countries that have been the most successful in this type of confrontation with multinational corporations are large countries such as United States and Brazil[citation needed], which have viable indigenous market competitors.

Lobbying

Multinational corporate lobbying is directed at a range of business concerns, from tariff structures to environmental regulations. There is no unified multinational perspective on any of these issues. Companies that have invested heavily in pollution control mechanisms may lobby for very tough environmental standards in an effort to force non-compliant competitors into a weaker position. Corporations lobby tariffs to restrict competition of foreign industries. For every tariff category that one multinational wants to have reduced, there is another multinational that wants the tariff raised. Even within the U.S. auto industry, the fraction of a company's imported components will vary, so some firms favor tighter import restrictions, while others favor looser ones. Says Ely Oliveira, Manager Director of the MCT/IR: This is very serious and is very hard and takes a lot of work for the owner.pk

Multinational corporations such as Wal-mart and McDonald's benefit from government zoning laws, to create barriers to entry.Many industries such as General Electric and Boeing lobby the government to receive subsidies to preserve their monopoly.

Patents

any multinational corporations hold patents to prevent competitors from arising. For example, Adidas holds patents on shoe designs, Siemens A.G. holds many patents on equipment and infrastructure and Microsoft benefits from software patents. The pharmaceutical companies lobby international agreements to enforce patent laws on others.

Government power

In addition to efforts by multinational corporations to affect governments, there is much government action intended to affect corporate behavior. The threat of nationalization (forcing a company to sell its local assets to the government or to other local nationals) or changes in local business laws and regulations can limit a multinational's power. These issues become of increasing importance because of the emergence of MNCs in developing countries.

Micro-multinationals

Enabled by Internet based communication tools, a new breed of multinational companies is growing in numbers.(Copeland, Michael V. (2006-06-29). "How startups go global".
http://money.cnn.com/2006/06/28/magazines/business2/startupsgoglobal.biz2/index.htm.
Retrieved 2010-05-13.) These multinationals start operating in different countries from the very early stages. These companies are being called micro-multinationals. (Varian, Hal R. (2005-08-25). "*Technology* Levels the Business Playing Field".
The New York Times. http://www.nytimes.com/2005/08/25/business/25scene.html. Retrieved 2010-05-13.) What differentiates micro-multinationals from the large MNCs is the fact that they are small businesses. Some of these micro-multinationals, particularly software development companies, have been hiring employees in multiple countries from the beginning of the Internet era. But more and more micro-multinationals are actively starting to market their products and services in various countries. Internet tools like Google, Yahoo, MSN, Ebay and Amazon make it easier for the micro-multinationals to reach potential customers in other countries.

Service sector micro-multinationals, like Facebook, Alibaba etc. started as dispersed virtual businesses with employees, clients and resources located in various countries. Their

rapid growth is a direct result of being able to use the internet, cheaper telephony and lower traveling costs to create unique business opportunities.

Low cost SaaS (Software As A Service) suites make it easier for these companies to operate without a physical office.

Hal Varian, Chief Economist at Google and a professor of information economics at U.C. Berkeley, said in April 2010, "Immigration today, thanks to the Web, means something very different than it used to mean. There's no longer a brain drain but brain circulation. People now doing startups understand what opportunities are available to them around the world and work to harness it from a distance rather than move people from one place to another."

ENVIRONMENTAL ETHICS

Environmental ethics believes in the ethical relationship between human beings and the natural environment. Human beings are a part of the society and so are the other living beings. When we talk about the philosophical principle that guides our life, we often ignore the fact that even plants and animals are a part of our lives. They are an integral part of the environment and hence have a right to be considered a part of the human life. On these lines, it is clear that they should also be associated with our guiding principles as well as our moral and ethical values.

What is Environmental Ethics?

We are cutting down forests for making our homes. We are continuing with an excessive consumption of natural resources. Their excessive use is resulting in their depletion, risking the life of our future generations. Is this ethical? This is the issue that environmental ethics takes up. Scientists like Rachel Carson and the environmentalists who led philosophers to consider the philosophical aspect of environmental problems, pioneered in the development of environmental ethics as a branch of environmental philosophy.

The Earth Day celebration of 1970 was also one of the factors, which led to the development of environmental ethics as a separate field of study. This field received impetus when it was first discussed in the academic journals in North America and Canada. Around

the same time, this field also emerged in Australia and Norway. Today, environmental ethics is one of the major concerns of mankind.

When industrial processes lead to destruction of resources, is it not the industry's responsibility to restore the depleted resources? Moreover, can a restored environment make up for the originally natural one? Mining processes hamper the ecology of certain areas; they may result in the disruption of plant and animal life in those areas. Slash and burn techniques are used for clearing the land for agriculture.

Most of the human activities lead to environmental pollution. The overly increasing human population is increasing the human demand for resources like food and shelter. As the population is exceeding the carrying capacity of our planet, natural environments are being used for human inhabitation.

Thus human beings are disturbing the balance in the nature. The harm we, as human beings, are causing to the nature, is coming back to us by resulting in a polluted environment. The depletion of natural resources is endangering our future generations. The imbalance in nature that we have caused is going to disrupt our life as well. But environmental ethics brings about the fact that all the life forms on Earth have a right to live. By destroying the nature, we are depriving these life forms of their right to live. We are going against the true ethical and moral values by disturbing the balance in nature. We are being unethical in treating the plant and animal life forms, which coexist in society.

Human beings have certain duties towards their fellow beings. On similar lines, we have a set of duties towards our environment. Environmental ethics says that we should base our behavior on a set of ethical values that guide our approach towards the other living beings in nature.

Environmental ethics is about including the rights of non-human animals in our ethical and moral values. Even if the human race is considered the primary concern of society, animals and plants are in no way less important. They have a right to get their fair share of existence.

We, the human beings, along with the other forms of life make up our society. We all are a art of the food chain and thus closel associated with each other. We, to ether form

our environment. The conservation of natural resources is not only the need of the day but also our prime duty.

COMPUTER ETHICS

Ethics is a set of moral principles that govern the behavior of a group or individual. Therefore, computer ethics is set of moral principles that regulate the use of computers. Some common issues of computer ethics include intellectual property rights (such as copyrighted electronic content), privacy concerns, and how computers affect society. For example, while it is easy to duplicate copyrighted electronic (or digital) content, computer ethics would suggest that it is wrong to do so without the author's approval. And while it may be possible to access someone's personal information on a computer system, computer ethics would advise that such an action is unethical.

As technology advances, computers continue to have a greater impact on society. Therefore, computer ethics promotes the discussion of how much influence computers should have in areas such as artificial intelligence and human communication. As the world of computers evolves, computer ethics continues to create ethical standards that address new issues raised by new technologies.

WEAPONS DEVELOPMENT

A weapon is an instrument used for the purpose of causing harm or damage to people, animals or structures. Weapons are used in hunting, attack, self-defense, or defense in combat and range from simple implements like clubs and spears to complicated modern machines such as intercontinental ballistic missiles. One who possesses or carries a weapon is said to be armed.

In a broader context weapons include anything used to gain an advantage over an adversary or to place them at a disadvantage. Examples include the use of sieges, tactics, and psychological weapons which reduce the morale of an enemy

Classification By user

- what person or unit uses the weapon

- Personal weapons (or small arms) - designed to be used by a single person.
- Hunting weapon - primarily for hunting game animals for food or sport
- Infantry support weapons - larger than personal weapons, requiring two or more to operate correctly.
- Fortification weapons - mounted in a permanent installation, or used primarily within a fortification.
- Mountain weapons - for use by mountain forces or those operating in difficult terrain.
- Vehicle weapons - to be mounted on any type of military vehicle.
- Railway weapons - designed to be mounted on railway cars, including armored trains.
- Aircraft weapons - carried on and used by some type of aircraft, helicopter, or other aerial vehicle.
- Naval weapons - mounted on ships and submarines.
- Space weapons - are designed to be used in or launched from space.

By function

- the construction of the weapon and principle of operation

- Antimatter weapons (theoretical) would combine matter and antimatter to cause a powerful explosion.
- Archery weapons operate by using a tensioned string to launch a projectile.
- Artillery are capable of launching heavy projectiles over long distances.
- Biological weapons spread biological agents, causing disease or infection.
- Chemical weapons, poisoning and causing reactions.
- Energy weapons rely on concentrating forms of energy to attack, such as lasers or sonic attack.
- Explosive weapons use a physical explosion to create blast concussion or spread shrapnel.

- Firearms use a chemical charge to launch projectiles.
- Improvised weapons are common objects, reused as weapons.

- Incendiary weapons cause damage by fire.
- Non-lethal weapons are designed to subdue without killing.
- Magnetic weapons use magnetic fields to propel projectiles, or to focus particle

- Melee weapons operate as physical extensions of the user's body and directly impact their target.
- Missiles are rockets which are guided to their target after launch. (Also a general term for projectile weapons).
- Nuclear weapons use radioactive materials to create nuclear fission and/or nuclear fusion detonations.
- Primitive weapons make little or no use of technological or industrial elements.
- Ranged weapons (unlike Mêlée weapons), target a distant object or person.
- Rockets use chemical propellant to accelerate a projectile
- Suicide weapons exploit the willingness of their operator to not survive the attack.
- Trojan weapons appear on face value to be gifts, though the intent is to in some way to harm the recipient.

By target

- the type of target the weapon is designed to attack

- Anti-aircraft weapons target missiles and aerial vehicles in flight.
- Anti-fortification weapons are designed to target enemy installations.
- Anti-personnel weapons are designed to attack people, either individually or in numbers.
- Anti-radiation weapons target sources of electronic radiation, particularly radar emitters.
- Anti-satellite weapons target orbiting satellites.
- Anti-ship weapons target ships and vessels on water.
- Anti-submarine weapons target submarines and other underwater targets.

- Anti-tank weapons are designed to defeat armored targets.
- Area denial weapons target territory, making it unsafe or unsuitable for enemy use or travel.
- Hunting weapons are civilian weapons used to hunt animals.
- Infantry support weapons are designed to attack various threats to infantry units

CONSULTING ENGINEERS

Consultants are individuals who typically work for themselves but may also be associated with a consulting firm. They, for a fee, gives advice or provides a service in a field of specialized knowledge or training. Most consultants carry their own life and health insurance, pay their own taxes, most have their own tools and equipment. The consultant can work alone or with the client's staff.

Consultants can play a multi-faceted role. They can, for example function as advisors, fixers, bosses, generalists, stabilizers, listeners, advisors, specialists, catalysts, managers or quasi-employees. The actual work that consultants perform for one company to another may vary greatly, i.e. tax account to office decoration. However, the typical underlying reasons that a consultant is hired are universal. A problem exists and the owner or manager of the company has decided to seek the help of an expert.

Bringing in an expert can save time, effort and money. It has been estimated that approximately 3/4 of all companies call upon consultants at one time or another. Many companies claim that they receive a higher return for their invested dollars by using consultants for specific tasks.

Most companies have experienced the problem of needing short-term technical expertise. Perhaps the company's existing staff is already working to capacity. In many cases, the engineering skills required for a project can be satisfied with a full time employee. When they can not fully justify bringing someone on board full time, their answer is to hire a consultant. By doing so, the businessman solves his immediate problem without permanently increasing his payroll and payroll taxes.

Consultants can be hired when the company may not have anyone on staff capable of solving the specific problem. At such times, a costly learning curve on the part of the engineering staff is associated with the project. One example is using a consultant as a viable alternative during the development stages of new products. Hiring a consultant with experience in a given area can then cut days, weeks or even months off a project schedule. In addition, he can help the staff avoid mistakes they may otherwise make. When the project reaches a certain point, the permanent staff can then take over.

Consultants can deal directly with owners and upper management. In this role, consultants can provide an objective third-party view point. Critical objectives can then be identified and advise given in confidence.

Consultants are a viable alternative in assisting in feasibility studies or in proposal preparation.

Perhaps the manager cannot justify shifting the duties of existing staff members.

Another time that consultants become useful is when a company is just starting a business. The development of the company's new product can be begun by the consultant while a full time permanent technical staff member is being hired.

Finding the right consultant can be difficult. Managers can rely on referrals from their friends or hire the consultant who happens to call at the right time. Once the decisions is made to hire a consultant, the need is immediate and one may not have the time to shop for a consultant. As a part of planning ahead, it is wise to meet various consultants on an informal basis before the need to hire one arises. Then when the time comes, you will know exactly who to call for you have already established an informal relationship

ETHICS IN ASCE

To preserve the high ethical standards of the civil engineering profession, the Society's ethics program includes:

- Edict

  The Society maintains a Code of Ethics.

- Enforcement

  The Society enforces the Code by investigating potential violations of the Code and taking disciplinary action if warranted.

- Education

  The Society endeavors to educate its members and the public on ethics issues.

IEEE code of Ethics

1. to accept responsibility in making decisions consistent with the safety, health and welfare of the public, and to disclose promptly factors that might endanger the public or the environment;
2. to avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist;
3. to be honest and realistic in stating claims or estimates based on available data;
4. to reject bribery in all its forms;
5. to improve the understanding of technology, its appropriate application, and potential consequences;
6. to maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations;
7. to seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributions of others;

8. to treat fairly all persons regardless of such factors as race, religion, gender, disability, age, or national origin;

9. to avoid injuring others, their property, reputation, or employment by false or malicious action;

10. to assist colleagues and co-workers in their professional development and to support them in following this code of ethics

Ethics in Indian Institute of Materials and Management

- To consider first, the TOTAL interest to one's organization in all transactions without impairing the dignity and responsibility to one's office;

- To buy without prejudice, seeking to obtain the maximum ultimate value for each Rupee of Expenditure;

- To subscribe and work for honesty and truth in buying and selling, to denounce all forms and manifestations of commercial bribery and to eschew anti-social practices;

- To accord a prompt and courteous reception so far as conditions will permit, to all who call upon a legitimate business mission;

To respect one's obligations and those of one's organization, consistent with good business practice

Ethics in Institute of Engineers

1.1 Engineers serve all members of the community in enhancing their welfare, health and safety by a creative process utilising the engineers' knowledge, expertise and experience.

1.2 Pursuant to the avowed objectives of The Institution of Engineers (India) as enshrined in the presents of the Royal Charter granted to the Institution, the Council of the Institution prescribed a set of "Professional Conduct Rules" in the year 1944 replacing the same with the "Code of Ethics for Corporate Members" in the year 1954 which was revised in the year 1997.

1.3 In view of globalisation, concern for the environment and the concept of sustainable development, it has been felt that the prevailing "Code of Ethics for Corporate Members" needs review and revision in letter and spirit. The engineering organisations world over have updated their Code of Ethics.

1.4 The Council of the Institution vested with the authority in terms of the Present 2(j) of the Royal Charter adopted at its 626th meeting held on 21.12.2003 at Lucknow the "Code of Ethics for Corporate Members" as provided hereinafter.

1.5 The Code of Ethics is based on broad principles of truth, honesty, justice, trustworthiness, respect and safeguard of human life and welfare, competence and accountability which constitute the moral values every Corporate Member of the Institution must recognize, uphold and abide by.

1.6 This "Code of Ethics for Corporate Members" shall be in force till the same is revised by a decision of the Council of the Institution.

CODE OF ETHICS FOR Institute of Engineers

1.0 Preamble

1.1 The Corporate Members of The Institution of Engineers (India) are committed to promote and practice the profession of engineering for the common good of the community bearing in mind the following concerns :

1.1.1 Concern for ethical standard;

1.1.2 Concern for social justice, social order and human rights;

1.1.3 Concern for protection of the environment;

1.1.4 Concern for sustainable development;

1.1.5 Public safety and tranquility.

2.0 The Tenets of the Code of Ethics

2.1 A Corporate Member shall utilise his knowledge and expertise for the welfare, health and safety of the community without any discrimination for sectional or private interests.

2.2 A Corporate Member shall maintain the honour, integrity and dignity in all his professional actions to be worthy of the trust of the community and the profession.

2.3 A Corporate Member shall act only in the domains of his competence and with diligence, care, sincerity and honesty.

2.4 A Corporate Member shall apply his knowledge and expertise in the interest of his employer or the clients for whom he shall work without compromising with other obligations to these Tenets.

2.5 A Corporate Member shall not falsify or misrepresent his own or his associates' qualifications, experience, etc.

2.6 A Corporate Member, wherever necessary and relevant, shall take all reasonable steps to inform himself, his employer or clients, of the environmental, economic, social and other possible consequences, which may arise out of his actions.

2.7 A Corporate Member shall maintain utmost honesty and fairness in making statements or giving witness and shall do so on the basis of adequate knowledge.

2.8 A Corporate Member shall not directly or indirectly injure the professional reputation of another member.

2.9 A Corporate Member shall reject any kind of offer that may involve unfair practice or may cause avoidable damage to the ecosystem.

2.10 A Corporate Member shall be concerned about and shall act in the best of his abilities

for maintenance of sustainability of the process of development.

2.11 A Corporate Member shall not act in any manner which may injure the reputation of the Institution or which may cause any damage to the Institution financially or otherwise.

3.0 General Guidance

The Tenets of the Code of Ethics are based on the recognition that –

3.1 A common tie exists among the humanity and that The Institution of Engineers (India) derives its value from the people, so that the actions of its Corporate Members should indicate the member's highest regard for equality of opportunity, social justice and fairness;

3.2 The Corporate Members of the Institution hold a privileged position in the community so as to make it a necessity for their not using the position for personal and sectional interests.

4.0 And, as such, a Corporate Member –

4.1 should keep his employer or client fully informed on all matters in respect of his assignment which are likely to lead to a conflict of interest or when, in his judgement, a project will not be viable on the basis of commercial, technical, environmental or any other risks;

4.2 should maintain confidentiality of any information with utmost sincerity unless expressly permitted to disclose such information or unless such permission, if withheld, may adversely affect the welfare, health and safety of the community;

4.3 should neither solicit nor accept financial or other considerations from anyone related to a project or assignment of which he is in the charge;

4.4 should neither pay nor offer direct or indirect inducements to secure work;

4.5 should compete on the basis of merit alone;

4.6 should refrain from inducing a client to breach a contract entered into with another duly appointed engineer;

4.7 should, if asked by the employer or a client, to review the work of another person or organisation, discuss the review with the other person or organisation to arrive at a balanced opinion;

4.8 should make statements or give evidence before a tribunal or a court of law in an objective and accurate manner and express any opinion on the basis of adequate knowledge and competence; and

4.9 should reveal the existence of any interest – pecuniary or otherwise – which may affect the judgement while giving an evidence or making a statement.

5.0 Any decision of the Council as per provisions of the relevant Bye-Laws of the Institution shall be final and binding on all Corporate Members

ASME Code of Ethics of Engineers

ASME requires ethical practice by each of its members and has adopted the following Code of Ethics of Engineers as referenced in the ASME Constitution, Article C2.1.1.

CODE OF ETHICS OF ENGINEERS

The Fundamental Principles

Engineers uphold and advance the integrity, honor and dignity of the engineering profession by:

I. Using their knowledge and skill for the enhancement of human welfare;

Being honest and impartial, and serving with fidelity the public, their employers and clients; and

III. Striving to increase the competence and prestige of the engineering profession.

The Fundamental Canons

1. Engineers shall hold paramount the safety, health and welfare of the public in the performance of their professional duties.

2. Engineers shall perform services only in the areas of their competence.

3. Engineers shall continue their professional development throughout their careers and shall provide opportunities for the professional and ethical development of those engineers under their supervision.

4. Engineers shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest or the appearance of conflicts of interest.

5. Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.

6. Engineers shall associate only with reputable persons or organizations.

7. Engineers shall issue public statements only in an objective and truthful manner.

8. Engineers shall consider environmental impact in the performance of their professional duties.

The ASME criteria for interpretation of the Canons are guidelines and represent the objectives toward which members of the engineering profession should strive. They are principles which an engineer can reference in specific situations. In addition, they provide interpretive guidance to the ASME Board on Professional Practice and Ethics on the Code of Ethics of Engineers.

1. Engineers shall hold paramount the safety, health and welfare of the public in the performance of their professional duties.

a. Engineers shall recognize that the lives, safety, health and welfare of the c are dependent upon engineering judgments, decisions and practices incorporated into structures, machines, products, processes and devices.

b. Engineers shall not approve or seal plans and/or specifications that are not of a design safe to the public health and welfare and in conformity with accepted engineering standards.

c. Whenever the Engineers' professional judgments are over ruled under circumstances where the safety, health, and welfare of the public are endangered, the Engineers shall inform their clients and/or employers of the possible consequences.

(1) Engineers shall endeavor to provide data such as published standards, test codes, and quality control procedures that will enable the users to understand safe use during life expectancy associated with the designs, products, or systems for which they are responsible.

(2) Engineers shall conduct reviews of the safety and reliability of the designs, products, or systems for which they are responsible before giving their approval to the plans for the design.

.Whenever Engineers observe conditions, directly related to their employment, which they believe will endanger public safety or health, they shall inform the proper authority of the situation.

d. If engineers have knowledge of or reason to believe that another person or firm may be in violation of any of the provisions of these Canons, they shall present such information to the proper authority in writing and shall cooperate with the proper authority in furnishing such further information or assistance as may be required.

2. Engineers shall perform services only in areas of their competence.

a. Engineers shall undertake to perform engineering assignments only when qualified by education and/or experience in the specific technical field of engineering involved.

b. Engineers may accept an assignment requiring education and/or experience outside of their own fields of competence, but their services shall be restricted to other phases of the project in which they are qualified. All other phases of such project shall be performed by qualified associates, consultants, or employees.

3. Engineers shall continue their professional development throughout their careers, and should provide opportunities for the professional and ethical development of those engineers under their supervision.

4.Engineers shall act in professional matters for each employer or client as faithful agents or trustees,and shall avoid conflict of interest or the appearance of conflicts of interest

a. Engineers shall avoid all known conflicts of interest with their employers or clients and shall promptly inform their employers or clients of any business association, interests, or circumstances which could influence their judgment or the quality of their services.

b. Engineers shall not undertake any assignments which would knowingly create a potential conflict of interest between themselves and their clients or their employers.

c. Engineers shall not accept compensation, financial or otherwise, from more than one party for services on the same project, or for services pertaining to the same project, unless the circumstances are fully disclosed to, and agreed to, by all interested parties.

d. Engineers shall not solicit or accept financial or other valuable considerations, for

specifying products or material or equipment suppliers, without disclosure to their clients or employers.

e. Engineers shall not solicit or accept gratuities, directly or indirectly, from contractors, their agents, or other parties dealing with their clients or employers in connection with work for which they are responsible. Where official public policy or employers' policies tolerate acceptance of modest gratuities or gifts, engineers shall avoid a conflict of interest by

complying with appropriate policies and shall avoid the appearance of a conflict of interest.

f. When in public service as members, advisors, or employees of a governmental body or department, Engineers shall not participate in considerations or actions with respect to services provided by them or their organization(s) in private or product engineering practice.

g. Engineers shall not solicit an engineering contract from a governmental body or other entity on which a principal, officer, or employee of their organization serves as a member without disclosing their relationship and removing themselves from any activity of the body which concerns their organization.

h. Engineers working on codes, standards or governmental sanctioned rules and specifications shall exercise careful judgment in their determinations to ensure a balanced viewpoint, and avoid a conflict of interest.

i. When, as a result of their studies, Engineers believe a project(s) will not be successful, they

shall so advise their employer or client.

j. Engineers shall treat information coming to them in the course of their assignments as confidential, and shall not use such information as a means of making personal profit if such action is adverse to the interests of their clients, their employers or the public.

(1) They will not disclose confidential information concerning the business affairs or technical processes of any present or former employer or client or bidder under evaluation, without his consent, unless required by law or court order.

(2) They shall not reveal confidential information or finding of any commission or board of which they are members unless required by law or court order

Designs supplied to Engineers by clients shall not be duplicated by the Engineers for others

k. Engineers shall act with fairness and justice to all parties when administering a construction (or other) contract.

l. Before undertaking work for others in which Engineers may make improvements, plans, designs, inventions, or other records which may justify seeking copyrights, patents, or proprietary

rights, Engineers shall enter into positive agreements regarding the rights of respective parties.

m. Engineers shall admit their own errors when proven wrong and refrain from distorting or altering the facts to justify their mistakes or decisions.

n. Engineers shall not accept professional employment or assignments outside of their regular work without the knowledge of their employers.

o. Engineers shall not attempt to attract an employee from other employers or from the market place by false or misleading representations.

5. Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.

a. Engineers shall negotiate contracts for professional services on the basis of demonstrated

competence and qualifications for the type of professional service required.

b. Engineers shall not request, propose, or accept professional commissions on a contingent basis if, under the circumstances, their professional judgments may be compromised.

c. Engineers shall not falsify or permit misrepresentation of their, or their associates, academic or professional qualification. They shall not misrepresent or exaggerate their degrees of responsibility in or for the subject matter of prior assignments. Brochures or other presentations used to solicit personal employment shall not misrepresent pertinent facts concerning employers, employees, associates, joint venturers, or their accomplishments.

d. Engineers shall prepare articles for the lay or technical press which are only factual. Technical Communications for publication (theses, articles, papers, reports,etc.) which are based on research involving more than one individual (including students and supervising faculty, industrial supervisor/researcher or other co-workers) must recognize all significant contributors. Plagiarism, the act of substantially using another's ideas or written materials without due credit, is unethical. (See Appendix.)

e. Engineers shall not maliciously or falsely, directly or indirectly, injure the professional reputation, prospects, practice or employment of another engineer, nor shall they indiscriminately criticize another's work.

f. Engineers shall not use equipment, supplies, laboratory or office facilities of their employers to carry on outside private practice without consent.

6. Engineers shall associate only with reputable persons or organizations.

a. Engineers shall not knowingly associate with or permit the use of their names or firm names in business ventures by any person or firm which they know, or have reason to believe, are engaging in business or professional practices of a fraudulent or dishonest nature.

b. Engineers shall not use association with non-engineers, corporations, or partnerships to disguise unethical acts.

7. Engineers shall issue public statements only in an objective and truthful manner.

a. Engineers shall endeavor to extend public knowledge, and to prevent misunderstandings of the achievements of engineering.

b. Engineers shall be completely objective and truthful in all professional reports, statements or testimony. They shall include all relevant and pertinent information in such reports, statements or testimony.

c. Engineers, when serving as expert or technical witnesses before any court, commission, or other tribunal, shall express an engineering opinion only when it is founded on their adequate knowledge of the facts in issue, their background of technical competence in the subject matter, and their belief in the accuracy and propriety of their testimony.

d. Engineers shall issue no statements, criticisms, or arguments on engineering matters which

are inspired or paid for by an interested party, or parties, unless they preface their comments by identifying themselves, by disclosing the identities of the party or parties on whose behalf they are speaking, and by revealing the existence of any financial interest they may have in matters under discussion.

e. Engineers shall be truthful in explaining their work and merit, and shall avoid any act tending to promote their own interest at the expense of the integrity and honor of the profession or another individual.

8. Engineers shall consider environmental impact in the performance of their professional duties.

a. Engineers shall concern themselves with the impact of their plans and designs on the environment. When the impact is a clear threat to health or safety of the public, then the guidelines for this Canon revert to those of Canon 1.

9. Engineers accepting membership in The American Society of Mechanical Engineers by this action agree to abide by this Society Policy on Ethics and procedures for its implementation.

Moral Leadership

Moral Leadership brings together in one comprehensive volume essays from leading scholars in law, leadership, psychology, political science, and ethics to provide practical, theoretical policy guidance. The authors explore key questions about moral leadership such as:

- How do leaders form, sustain, and transmit moral commitments?
- Under what conditions are those processes most effective?

- What is the impact of ethics officers, codes, training programs, and similar initiatives?

- How do standards and practices vary across context and culture?

- What can we do at the individual, organizational, and societal level to foster moral leadership?

ENGINEERS AS EXPERT WITNESS AND ADVISORS

Engineering expert witnesses are highly credentialed mechanical, safety & civil, geotechnical, chemical and electrical engineers specializing in the areas of design, construction & structural engineering, failure analysis, human factors, occupational safety, metallurgy and more. They provide litigation support through review and evaluation of distressed structures for land slide and erosion cases; performance of forensic studies on hydraulics, power plants, pipelines, boiler systems, traffic, automotive, electrical fire involving electrical systems of machinery; site research and inspection, laboratory testings,

report writing, depositions and court testimony.

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