CONCORDIA UNIVERSITY
FACULTY OF ENGINEERING AND COMPUTER SCIENCE

ENGR 201
PROFESSIONAL PRACTICE AND RESPONSIBILITY

PROFESSOR : REMI ALAURENT, ENG.

CHAPTER 05

ETHICS, DEONTOLOGY AND DECISION MAKING

TOPIC 1 : ETHICAL BEHAVIOUR

- **Ethical behaviour**
  - Ethical theories : definition
    - An ethical theory attempts to provide a clear and comprehensive perspective on morality and moral responsibilities that expresses our reasoned convictions, identifies what is morally fundamental and provides a framework for resolving moral dilemmas.
    - Ethical theories are often classified into main trends :

- Mill's Utilitarianism

  - John Stuart Mill (1806-1873)
  - Utilitarianism states the best choice in a moral dilemma is the one that produces the greatest benefit for the greatest number of people, with the benefit most equally divided among those people.
  - Universal happiness is the ultimate good.
  - However, it allows for rules to be broken if doing so will produce the most "good". It also seems to be insensitive to the needs of individuals. And its implementation largely depends on determining what will lead to the most good, which is problematic because it is frequently impossible to know exactly and in advance what the consequences of an action will be.
  - The duration, intensity and equality of distribution should be considered : another difficulty lies in quantitatively calculating the "maximum benefit".
  - It is an easily understood theory. An example : income tax and the redistribution of wealth and services; a waste treatment facility.
  - The most common justification for modern engineering ethics and for decision making in modern "democratic" societies.
  - Mill's utilitarianism is sometimes called act-utilitarianism. A variant is rule-utilitarianism, where moral rules are regarded as primary : we should act according to the rules which, if generally followed, should provide the greatest benefit for the greatest number of people. Hence, the concept of *moral codes.* The difference ? Act-utilitarianism leaves it open to participate in doubtful schemes that may produce overall good, for example kickback schemes (or marijuana culture), that rule-utilitarianism condemns.

- Locke's Rights ethics

  - John Locke (1632-1704)
  - Rights ethics states that everyone has rights that arise from one's very existence as a human being
  - Locke's statement that every man has the right to life, liberty and property was echoed in the Declaration of Independence of what was to become the United States of America (1776); it also influenced the French Revolution (1789) and the Canadian Charter of Rights and Freedoms (1982).

- This theory provides the foundation of many modern democracies. However, its narrow interpretation of who is entitled to these rights allowed for the continuation of discrimination, slavery, death penalty, etc.
- Locke's conception of human rights is highly individualistic : rights are entitlements that prevent others from meddling in one's life.
- This theory clashes head on with utilitarianism : it emphasises free enterprise and protection of private property, save for the strict minimum needed to defend them and the nation.
- It is determinedly against government involvement, welfare systems and taxes.
- A more recent variant is welfare rights (A. I. Melden, 1910-1991), where the extent of rights are determined according to interrelationships between persons. Welfare "rights" to community-provided benefits are supposed to allow everyone to live a minimally decent human life when one does not have the means to acquire them on one's own, and when the community is able to provide them. This is the basis for minimal social systems as in present-day United States.
- Welfare rights theoreticians justify special rights as this : people have special rights owing to contracts and other types of promises because they have human rights to liberty and property that are violated when the terms of understanding and commitment that these contracts and promises entail are violated.

- <u>Kant's Formalism or Duty ethics</u>

  - Immanuel Kant (1724-1804)
  - Duty ethics propose that the fundamental duty of each person is to act in a correct ethical manner.
  - It stems from the belief that each person's conscience imposes an absolute imperative (an unconditional command) to follow those courses of action that would be acceptable as universal principles, for everyone to follow.
  - Happiness is the result of "good will", or actively seeking to follow the categorical imperatives of one's conscience
  - In this theory, the intention to do one's duty is more important than the results or consequences, however unpleasant they might be.
  - This theory is therefore bent on rules such as : be honest, be fair, obey the law, don't lie, keep your promises, do not hurt others...

- According to this philosophy, every engineer has an individual duty to prevent harm to human life and to consider the welfare of society as paramount.
- The problem with this theory : duties based on the categorical imperatives never have exceptions. In that view, deceiving a kidnapper to secure the release of an hostage would be wrong...
- Therefore, modern duty ethicists such as Bernard Gert attempt to minimise the need for relying on intuition about justified exceptions by engaging in public reasoning to establish some degree of consensus among "rational agents" (whatever that means).

- Aristotle's Virtue ethics

  - Aristotle (384-322 B.C.), ancient Greek philosopher
  - It states that the goodness of an act, a person or an object depends on its function or goal.
  - Easy enough for objects, but for persons the theory looks for human qualities and, above all, the power of thought which it shares with no other animal or thing.
  - According to Aristotle, true happiness is to be achieved by developing qualities of character, or "virtues", through reason, logic and deduction. Those virtues are envisioned as a happy medium between two extremes of excess and deficiency, or "vices". The result is called "the golden mean". For example, providence lies between avarice and prodigality, modesty is the golden mean vanity and humility, etc.
  - This amounts to a "theory of compromise" and it is frequently used in resolving ethical dilemmas.

- John Rawls' Theory of Justice

  - John Rawls (1921-2002)
  - A contemporary ethicist, Rawls argues for a general perspective based on two principles and a rule of precedence :
    1. each person is entitled to the most extensive amount of political liberty compatible with an equal amount for others
    2. difference in social powers and economic benefits are justified only when they are likely to benefit everyone, including the most disadvantaged groups

- the first principle has priority and must be satisfied before the second one

- James and Dewey's Pragmatism

  - William James (1842-1910) and John Dewey (1859-1952)
  - A theory about morality that emphasises the limitations of abstract rules : a rejection of the search for general theories.
  - This theory emphasises the necessity to consider the actual context in which facts and values must be weighted and balanced; as a consequence, it emphasises flexibility.
  - By paying attention to practical cases and context, it can prove to be very useful in reconciling people who hold greatly differing moral theories (because of religious, cultural, social or political background) : it works from the facts up, instead of from principles down.
  - It could be a way to integrate goods, rights, duties and rights within specific situations : it is more a method than a theory.

- Each theory, when it was proposed, was believed by its proponents to be the basis for ethical reasoning. All the theories stand up reasonably and are useful aides to decision making. They may appear to differ significantly but none is significantly superior to the others and, interestingly, they deliver fairly similar results when applied to common ethical problems.

- **Customs, religions, non-western ethical thinking**

  - The above theories are mostly rooted in the Western World. It could be argued that they do not apply, or are foreign to, other countries, cultures and religions.

  - However, studies show that ethical thinking has, to a large extent, developed similarly around the world, even at times when civilisations had few interrelations. It developed from different sources and in different ways, but the results are generally the same. Ethics, it turns out, is not geographic or cultural.

  - Personal ethics should not be determined by where you are or who you work for or with : it is not acceptable to follow the old expression "When in Rome, do as the Romans do". It is no more acceptable to base ethical decisions on racial, ethnic or religious prejudice : a human life always should have the same value. If

your values say that lying, cheating or deceiving is wrong, it should be no less wrong if you dealt with representatives of an hypothetical group who does not hold such behaviour as bad.

- **Politics**

  - Politics may play a large role in determining behaviour : is a small disadvantaged group justified of resorting to unacceptable behaviour when its survival is at stake (at least in its view)? Witness the development of weapons of mass destruction, the diversion or blocking of strategic rivers, the negligence of the effects of trans-border pollution, etc.

  - Political considerations may also play a major role : trade issues, sustainable development, fair trade etc. are at stake. For example, consider how mining projects affect developing regions. How are ethical issues to be resolved in the face of multifaceted conflicts of values?

- **Ethical conduct of the engineer**

  - A quick reminder from Lecture 1 : are professionals "trustworthy servants of the masses"?

    - Moral responsibility :
      - "a responsible person" : morally desirable feature
      - "professional responsibility" : implies conscientious efforts to meet the responsibilities in one's work
      - a capacity to know how to act in morally appropriate ways
      - "responsible" : accountable or answerable for meeting particular obligations
      - "responsible" for success - or failure

    - Social responsibility :
      - engineering is directed toward providing technological solutions that concern the public's safety, well-being, health and prosperity

    - Legal responsibility :
      - the price of exclusivity; may be legislated
      - entering a regulated activity brings an obligation to research actively what its constraints are

- it can't be delegated

- **Ethical value system**

  - An ethical value system defines the principles of right and wrong that are accepted by an individual or a social group

  - Engineering societies, communities and associations have, in time, developed remarkably similar fundamental principles, which more or less always include:
    - holding the interests of society and of the clients as top priorities, while personal interest and profitability are secondary
    - using their knowledge / capacity / skills to improve public health /safety/ welfare and the environment
    - being honest and impartial and serving with fidelity the public, their employers and clients
    - dedication to integrity, availability, independence, discretion, legality
    - striving to increase the competence / prestige / reputation of the profession
    - support professional development / colleagues / technical societies

  - See the various codes of ethics enacted by :
    - CCPE : http://www.ccpe.ca/e/files/guideline_code_with.pdf
    - ASCE : http://www.asce.org/inside/codeofethics.cfm
    - ABET, AIChE, IEEE, NSPE, etc. on their respective web sites

- **"Deontology" : ethics made into law**

  - Codes of Ethics : two different realities

    - <u>Codes of ethics as general "moral" guides</u>

      - The codes enacted by many associations, societies and boards are written in general terms, often called canons, sometimes complemented by guidelines or rules.

      - These codes are used for :
        - Inspiration and guidance
        - Positive, perhaps legal support
        - Education and mutual understanding

- Contributing to the profession's reputation
- Protecting the "status quo"
- Promoting business interests

- Codes of ethics as legal instruments : deontology rules

  - Organisations (such as OIQ, PEO, APEGGA etc.) legally vested with the power to regulate the practice of the engineering profession will use the code of ethics (and other laws and regulations) for :
    - Discipline
    - Deterrence
    - Exemplarity
    - And some of the same purposes as "general guide" codes
  - The Code of ethics of engineers enacted by the Government of Québec with respect to the engineering profession at the bequest of the Ordre des ingénieurs du Québec is such a code

- The use of the term "Code of ethics" is therefore somewhat confusing.

TOPIC 2 : OBEDIENCE

- **Employer authority**

  - When an engineer accepts a contract for employment, a contract is created (of course, the contract may pre-exist if a labour union is present)

  - The employer acquires the authority to direct the engineer: this is because the employer has managerial authority ("droit de gérance" in French) to direct the resources of the company

  - Needless to say, the employer's authority is restricted by the bounds set by labour relations laws, occupational health and safety laws, the Civil Code of Quebec, federal and provincial charters of rights and freedoms, etc.

  - The employer also has a duty under that contract to treat the engineer as a professional : he is presumed to having hired the engineer with due consideration for the latter's professional status, which necessarily

encompasses all the laws and regulations respecting the practice of the engineering profession – and he is bound by them since they are "public"

- The engineer retains technical authority in his field of expertise and, theoretically, the employer will respect his professional independence, while retaining the right to define general objectives and to question the engineer about his work

- In Quebec, the Code of ethics of engineers clearly states that :

  1.02. In this Regulation, unless the context indicates otherwise, the word "client" means a person to whom an engineer provides professional services, including an employer.

- **Conflict**

  - The engineer may find himself in conflicting situations :
    - Lack of time
    - Lack of resources
    - Demands that take him beyond his level of expertise
    - Illegal actions and/or situations
    - Actions that are contrary to the Code of ethics or other legal rules that apply to the profession
    - Actions contrary to the engineer's personal conscience.

  - The Code of ethics of Engineers covers the most common situations in sections such as the following :

    3.03.04. An engineer may not cease to act for the account of a client unless he has just and reasonable grounds for so doing. The following shall, in particular, constitute just and reasonable grounds:

    (a) the fact that the engineer is placed in a situation of conflict of interest or in a circumstance whereby his professional independence could be called in question;
    (b) inducement by the client to illegal, unfair or fraudulent acts;
    (c) the fact that the client ignores the engineer's advice.

    4.02.03. An engineer shall not abuse a colleague's good faith, be guilty of breach of trust or be disloyal towards him or willfully damage his reputation.

> Without restricting the generality of the foregoing, the engineer shall not, in particular:
>
> (a) ...;
>
> (b) take advantage of his capacity of employer or executive to limit in any way the professional independence of an engineer employed by him or under his responsibility, in particular with respect to the use of the title of engineer or the obligation of every engineer to commit his professional liability;
>
> (c)...
>
> **4.02.06.** An engineer who is called upon to collaborate with a colleague must retain his professional independence. If a task is entrusted to him and such task goes against his conscience or his principles, he may ask to be excused from doing it.

- Dealing with illegal requests or action contrary to the code of ethics is usually easier than with conflicts of conscience, where the engineer cannot rely on a clear-cut rule to justify his stand.
- In any case, the engineer may face disciplinary action, perhaps dismissal.
- However, remedies for wrongful dismissal do exist, and the engineer may invoke his professional obligations.
- Engineering societies in the United States, such as NSPE, have come up with "Guidelines to Professional Employment for Engineers and Scientists"; there is no equivalent with the CCPE, but provincial associations / ordre in Canada have the authority to adopt legally binding codes of ethics, while the Guidelines have no such authority in either the United States or Canada.

- **Misguided loyalty**
  - The engineer shall preserve his professional independence and act on his professional commitments to the public. Taking loyalty as an excuse to do wrong is a great disservice to the employer.
  - Upholding company policy (which should be ethical in principle) must take precedence over obedience to an unethical /misguided / misinformed supervisor.

- An engineer has duties to both employer and public that should not be contradictory : there need not be a conflict between the moral status and obligations of the engineer and the moral status and obligations of the employee, although there may be differences owing to status.

TOPIC 3 : DECISION MAKING

- **The Ethical reasoning : a ten-step process approach**

  - Countless methods, processes or "recipes" have been offered to help in resolving ethical dilemmas. Some are general, others are situation-specific; intuitive or logical; etc...

  - The process offered here is an example of a fairly simple "process" approach.

  - Ten-step process :

    1. State the problem : formulate it in simple terms, focusing on essentials, and in the first person ("I am responsible for...")

    2. Provisionally, trust your first intuition : what often emerges first is an outburst of professional conscience, of moral sense, a spontaneous reaction arising from proficiency and social responsibility

    3. Talk about it, gather information, communicate, create a dialogue, negotiate if necessary, then sort out the conflicting arguments : the issue should not disappear under fear, secrecy or "loyalty"

    4. Acknowledge your emotions in order to better manage them : denial is counterproductive and unrealistic

    5. Identify which values are conflicting and determine which will be held as paramount : concentrate on one (e.g., public safety) and discount the others

    6. Know your Code of Ethics and recognise situations where it applies : while you should be paying attention to its moral origins and considerations, keep in mind that it also is a set of enforceable rules

7. Formulate all possible solutions, listing their advantages and drawbacks for all who may be concerned, not only those directly involved. Under stress, emergency or duress, the scope of possible solutions tends to narrow quickly. Thus, step back.

8. Resist any temptation to shift the responsibility onto others : this is human, but cowardly and unprofessional. Stand your ground.

9. Test your decision against three criteria: transparency (can it be made public?), exemplarity (can it serve as a model for future situations ?) and reciprocity (is it fair or at least reasonable for all parties involved ? would I want to be treated that way?)

10. Take an acceptable decision, making sure to clearly distinguish the option from its terms and conditions : there is always several possible outcomes, but once your mind is made up it should not be negotiable, whereas terms and conditions may be to a certain extent. This might actually win acceptance, for the decision-maker is seldom alone.

REQUIRED READING

- Guideline on the Code of Ethics, CCPE, Ottawa, 2001
  - http://www.ccpe.ca/e/files/guideline_code_with.pdf

SUGGESTED READING

- NSPE Code of ethics for Engineers
  - http://www.nspe.org/ethics/CodeofEthics/index.html
  - (also available in French, German and Spanish on the NSPE web site)

A FEW REFERENCES

- Charles Fleddermann, Engineering Ethics , 1999, Prentice-Hall, Upper Saddle River (NJ)

- Roland Schinzinger and Mike W. Martin, Introduction to Engineering Ethics, 2000, Mc GrawHill, New York (NY)

- Gordon C. Andrews and John D. Kemper, Canadian professional Engineering Practice and Ethics, 1999, Harcourt Brace & Co, Toronto, Canada

- Marie-France Bich, Le professionnel salarié – Considérations civiles et déontologiques dans Le défi du droit nouveau pour les professionnels, 1994, Les Éditions Thémis, Montréal