Objectives

Aim 1: In a given case study, you will be able to examine the motives of the participants

Aim 2: In a given case study, you will be able to apply the codes of engineering ethical codes

In this module, we will examine the motives which avoid individuals' conduct ethically. What might be the reasons an engineer chooses to be unethical in her/his professional life? We will discuss those impediments in the light of ethical codes in a case study.

1. AVOIDING IMPEDIMENTS TO ETHICAL BEHAVIOR

Many of the ethical situations that engineers face have obvious correct solutions. In other words, the ethically correct course of action is known. Yet, when confronted with these problems, engineers do not always act ethically. Why? In a book like this, it is impossible to examine the motives of every individual. However, we can examine some commonly cited reasons for not doing the right thing. There are three common responses given for not choosing the right path:

- It is not my problem.
- If I do not do it, someone else will.
- I cannot foresee everything that will happen.

Variations on these themes are often heard not just in engineering, but in everyday life as well. Let us examine some of these responses more closely and see if they are valid.

1.1. It is Not My Problem

It is very tempting to respond to problems this way since it relieves us of the responsibility for a situation. However, is it true? The consequences of an unethical decision are borne by everyone. For example, in the wake of accidents caused by an unsafe design, the costs of lawsuits and redesigns are borne by those who buy products from that company. If a product causes injury, we all pay for it through increased health insurance premiums. When cheating on government contracts occurs, taxpayers must make up this money. Therefore, unethical conduct winds up, either directly or indirectly, costing everyone. It truly is everyone’s problem.

1.2. If I Don’t, Someone Else Will

This statement is very often true. Rarely are you the only engineer working on a particular technology. Frequently, many others are working on the same or similar ideas. In the rush to be the first to the marketplace with a new idea or product, the thrill of the competition can get in the way of our ability to look objectively at what we are doing. Part of the fun of engineering is in beating the competition. However, do you want to be the first to do something that turns out to be harmful or unethical? Most of us would agree that being the first to gain notoriety for something wrong is not desirable.

1.3. I Can’t Foresee Everything That Will Happen

This is true, too. It is impossible to foresee every consequence of a new design or every potential use or misuse of your work. However, engineering is an inherently creative process; making new devices or structures requires that engineers be creative in their work. Part of creativity in engineering is looking at both the potential uses and the potential misuses of our designs. How do we do this? First, we have to start by making foresight part of the design process. We do that by attempting to design around potential problems that we identify. We can also work with regulators before a new technology is in place to ensure that the problems with the technology are understood and regulations are put in place to help ensure that the design is used ethically.
Second, ethics should not be an afterthought. Rather, ethical considerations should be an explicit part of the design process. Finally, we also need to acknowledge that there are probably some things that should not be done. What happens if the results of your work lead to unforeseen ethical problems? Do not beat yourself up about it. If you did your job correctly, you attempted to foresee those problems. However, of course, you cannot foresee everything. You can work after the fact to try to change things to be more acceptable.

Case:

You are an engineer working in a manufacturing facility that uses toxic chemicals in processing. Your job has nothing to do with the use and control of these materials.
The chemical "MegaX" is used at the site. Recent stories in the news have reported alleged immediate and long-term human genetic hazards from inhalation or other contacts with the chemical. The news items are based on findings from laboratory experiments, done on mice, by a graduate student at a well-respected university physiology department. Other scientists have neither confirmed nor refuted the experimental findings. Federal and local governments have not made official pronouncements on the subject.
Several employee friends have approached you on the subject and asked you to do something to eliminate the use of MegaX at your factory. You mention this concern to your manager who tells you, don’t worry, we have an Industrial Safety Specialist who handles that.
Two months elapse and MegaX is still used in the factory. The controversy in the press continues, but there is no further scientific evidence pro or con in the matter. The use of the chemical in your plant has increased and now more workers are exposed daily to the substance than was the case two months ago.

What, if anything, do you do?

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