**Chapter 1:**

Having read this chapter and answered the associated questions, readers should be able to

● describe recent changes that have taken place in the field of engineering,

and why this necessitates approaching engineering ethics from a different

perspective;

**Engineering are becoming more international and global.**

**Because tradition engineering carries within it some uniquely US or Western features, and some of them are not adaptable to other parts of the world. Approaching from global perspective enables engineers to study engineering ethics without any cultural presuppositions.**

● articulate not only the nature of ethics in general but also why it should be of

particular concern to engineers;

Ethics is about actions that have the potential to seriously impact the lives of others.

**Engineers are singularly important to the world.**

**Engineers are different from the general public. They have specialized knowledge and skills that are only acquired and acquirable through long periods of intensive study and training.**

**Several specific ethical obligations for engineers are derived from the nature of engineering itself.**

**Positions of engineers entail not only responsibilities but also rights.**

● explain the problem of theory and interconnected roles that reason,

engineers' role responsibilities, and case studies play in approaching engineering ethics from a global perspective.

**Problems of Theory: Theoretical and Cross-Cultural Disagreements**

**The Role of Reason: Its Universality and in Engineering. Without the ability to reason, engineering could not exist.**

**Role Responsibilities: Special Duties**

**Case:**

**1. emphasizes the process of active learning, which has been shown to facilitate student understanding;18**

**2. helps students to build up an experience base regarding ethical issues before they actually have to deal with these issues in their professional lives;**

**3. helps students to develop their ability to analyze and solve problems, in terms of not only ethics but also engineering, enabling them see the connections between ethics and engineering more clearly;**

**4. aids in the ability to generalize by looking at a variety of specific instances**

**and, thereby, helps students to form a more general ethical perspective.**

**Chapter2**

Having read this chapter, answered the associated questions, and completed the included exercise, readers should be able to

● understand why studying cases is important to engineering ethics education,

in general, and engineering ethics in global contexts, specifically;

**1.Studying cases helps both students and practitioners to**

**learn actively, which has been demonstrated to increase understanding.**

**2.Determine the proper subject matter of ethical analyses;**

**3.Build an experience base regarding ethical issues before facing similar situations in the world;**

**4.Develop the ability to analyze and solve not only ethical but also engineering problems;**

**5.Recognize and understand the connection between the technical and ethical dimensions of engineering work;**

**6.Generalize by examining a variety of specific instances, thereby forming an integrated ethical perspective for oneself.**

● describe the process of and justifications for the steps involved in the case-

study procedure;

**Identifying Ethical Issues**

**Narrowing the Focus**

**Determining Relevant Facts**

**Making Reasonable Assumptions**

**Undertaking Definitional Clarification**

**Conducting Ethical Analysis**

**Reviewing the Process**

**Resolving the Issue**

**Identifying Practical Constraints**

**Avoiding Ethical Problems**

● evidence the abilities involved in undertaking the initial steps involved in

completing a case-study analysis.

the use of reason and role responsibilities of engineers are needed in completing the case-study analysis.

**Chapter5**

Having read this chapter, completed the included exercises, and answered the associated questions, readers should be able to

● with reference to the case of Hurricane Katrina, explain the value of and

difficulty in studying disasters, identify and apply the basic ethical principles for global engineering, and identify competing claims made on engineering and engineers from the perspective of safety;

**Value of and difficulty in studying disasters:**

**1. Such circumstances highlight the paramount importance of public safety to engineering ethics and standards to address the nature of safety.**

**2. It is complex, and without understanding why events occur, it is difficult to learn from them.**

● describe the ways engineering can be understood as a kind of “social experimentation” and the responsibilities of engineers that follow from this analogy;

**The outcomes of experiments are uncertain : the introduction of new technologies into society can have unknown consequences**

**Responsibilities:**

**(1) A primary obligation to protect the safety of human subjects and respect their right of consent.**

**(2) A constant awareness of the experimental nature of any project, imaginative forecasting of its possible side effects, and a reasonable effort to monitor them. (3) Autonomous, personal involvement in all steps of a project.**

**(4) Accepting accountability for the results of a project”**

● explain the natures of and criteria for assessments of objective and subjective safety and how these present challenges to engineers, especially in cross- cultural contexts;

**Subjective safety consists in the feeling of not being in danger. Objective safety consists in the fact of not being in danger.**

**1.no product can ever be made perfectly safe**

**2.not all possible consequences can be foreseen.**

**3.for members of the public, the feeling of safety is influenced by knowledge**

**levels of risk acceptance vary culturally—in ways over which engineers do not have control—to a reasonable extent, they should be aware of cultural conditions in fulfilling their safety obligations. Obviously, however, there are limits beyond which engineers—especially on an individual basis—cannot know all the objective risks associated with courses of actions or the acceptability of these risks.**

● with reference to the case of the Uber Rape Scandal, explain some responsibilities that engineering and technology firms could be claimed to have to the safety of their users.

**Uber is the platform that lead the woman to meet with the man, so Uber should have the responsibility to ensure that the driver is not a criminal to protect the passenger.**