PROFESSIONAL ETHICS: Introduction

- Students sometimes ask why they should take a course in professional ethics, because they consider themselves to be ethical people.
    - It is important for them to understand, therefore, that their personal morality is not being questioned. Personal morality and professional ethics, however, are not always the same.
    - One might have personal objections to working on military projects, but avoiding such work is not required by professional ethics. On the other hand, professional ethics increasingly requires engineers to protect the environment, regardless of their personal moral convictions.
    - **DRIVERLESS CARS ARE IN OUR** future. It is easy to understand why, given the advantages they offer. They promise a significant reduction in traffic collisions, increased access of the elderly and disabled to automobile transportation, lower fuel consumption, and major increases in traffic flow. On the other hand, they raise many social, legal, and ethical questions. Perhaps the most obvious question is who should have responsibility for accidents. The first fatal accident of a driverless car occurred in Williston, Florida, on May 7, 2016. The occupant of the Tesla driverless car was killed when a tractor-trailer made a left turn in front of the car. The car went under the truck's trailer without applying the brakes, evidently because neither the autopilot nor the driver noticed the white side of the trailer against a brightly lit sky. Where should moral responsibility and legal liability lie in this case? Investigation revealed that the driver did not operate the Tesla according to instructions, and that Tesla did not deploy a system capable of identifying situations in which the driver was not prepared to take over at any time. And how realistic is it to install an autopilot system and then tell the driver she must be able to take over at any time?
    - Liability and responsibility are not the only questions raised by driverless cars. How safe are they? What kinds of information should be given to drivers before they purchase or use these vehicles? How should the potential problems of hacking and terrorism be handled? (A driverless car filled with explosives could be like a drone on the highway.) What about the potential loss of driving-related jobs? Should there be retraining for other jobs?

- Many of these questions have appeared in other forms and other contexts before. Technology almost always raises new moral and social issues or, most commonly, old issues in new ways.
- Questions of responsibility are not unique to driverless cars. They arise in the context of so-called engineering accidents, such as the loss of the Challenger and Columbia space vehicles. Moral issues also arise in thinking about the duties of engineers in such areas as the relationship of technology to the environment and handling risk properly.
- The issues are important to engineers not simply because engineers have usually created the technologies involved, but because engineers are professionals, and the concept of professionalism has a strong moral component.
- The two components of professionalism are (1) expertise in a certain area (accounting, law, medicine, engineering, etc.) and (2) adherence to moral guidelines, usually laid out in a formal code of ethics. Failure in either of these two areas means one is deficient as a professional.

- **WHAT IS A PROFESSION?**
  - The use of profess and related terms in the Middle Ages was associated with a monk's public profession of a way of life that carried with it stringent moral requirements.
  - By the late seventeenth century, the term had been secularized to apply to those who professed to be duly qualified to perform certain services of value to others.
  - Three approaches to professionalism are especially important in understanding the concept, and can be useful in understanding professional identity.
  - First, there is the ***Sociological Account***, which holds that there are characteristics especially associated with professionalism.
    - Characteristics of a Profession
    - 1. Extensive period of training of an intellectual character, usually obtained at a college or university.
    - 2. Possessing knowledge and skills vital to the well-being of the larger society.
    - 3. A monopoly or near-monopoly on the provision of professional services, and considerable control over professional education and the standards for admission into the profession.
    - 4. An unusual degree of autonomy in the workplace.

        - 5. A claim to be regulated by ethical standards, usually embodied in a code of ethics, that promotes the good of the public.
    - A second way to understand professionalism is the ***Social Contract Account***.
        - On the Social Contract Account, professionals have an implicit agreement with the public. On the one hand, professionals agree to attain a high degree of professional expertise, to provide competent service to the public, and to regulate their conduct by ethical standards. On the other hand, the public agrees to allow professionals to enjoy above-average wages, to have social recognition and prestige, and to have a considerable degree of freedom to regulate themselves.
    - A third account of professionalism is offered by philosopher ***Michael Davis***, who defines a profession in the following way:
        - A profession is a number of individuals in the same occupation voluntarily organized to earn a living by openly serving a moral ideal in a morally permissible way beyond what law, market, morality, and public opinion would otherwise require.
    - Davis definition highlights the facts that a profession is not composed of only one person, that it involves a public element, that it is a way people earn a living and is therefore usually something that occupies them during their working hours, that people enter into it voluntarily, and that it involves a morally desirable goal, such as curing the sick or promoting the public good.
    - Engineering is clearly a profession by all three accounts. There are a few rough edges to the fit, but this may be true with all professions.
- **PROHIBITED ACTIONS**
    - Many precepts in ordinary or nonprofessional ethics identify actions we should not do. Ethical precepts prohibit such actions as dishonesty, stealing, and murder.
    - Prohibitions are also a prominent part of professional ethics, including engineering ethics.
    - Approximately 80 percent of the code of the NSPE is taken up with statements that are, either explicitly or implicitly, prohibitive in character.
    - Even many provisions of the NSPE code that are not explicitly negative are actually prohibitive in character. Section II.1.b states that engineers shall approve only those engineering documents that are in conformity with

applicable standards. In other words, engineers shall not approve engineering documents that are not in conformity with applicable standards.

- This is not the same as saying that engineers shall approve all engineering documents that are in conformity with applicable standards.
- Presumably, there are other criteria that would need to be satisfied for approval of an engineering document to be required. Many other provisions of the code, such as the requirement that engineers notify the appropriate professional bodies or public authorities of code violations (II.1.f), are policing provisions and thus are essentially prohibitive in character. Even the requirement that engineers be objective and truthful (II.3.a) is another way of stating that engineers must not make biased and deceitful statements. Similarly, the provision that engineers shall continue their professional development (III.9.c) is another way of saying that engineers shall not neglect their professional development.
- **Examples of Prohibited Actions from the NSPE Code:**
  - Do not reveal privileged information (II,1, c)
  - Do not associate with dishonest professionals (II,1, d)
  - Do not aid the unlawful practice of engineering (II,1, e)
  - Do not accept compensation from two parties on the same project (II,4, b)
  - Do not participate in governmental decisions related to your own work (II,4, d)
  - Do not solicit work from a governmental body on which a member of your firm has a position (II,4, e)
  - Do not falsify your qualifications (II,5, a)
  - Do not give bribes (II,5, b)
  - Do not be influenced by conflicting interests (III,5)
  - Do not unjustly injure the reputation of another engineer (III,7)