Engineering Ethics

Engineering is a Profession

- Satisfies an indispensable social need
- Requires trust, discretion, judgment
- Applies knowledge and skill not possessed by the public
- Promotes professional ideas
- Has standards of admission
- Employs a code of ethics, ensuring appropriate conduct and competence

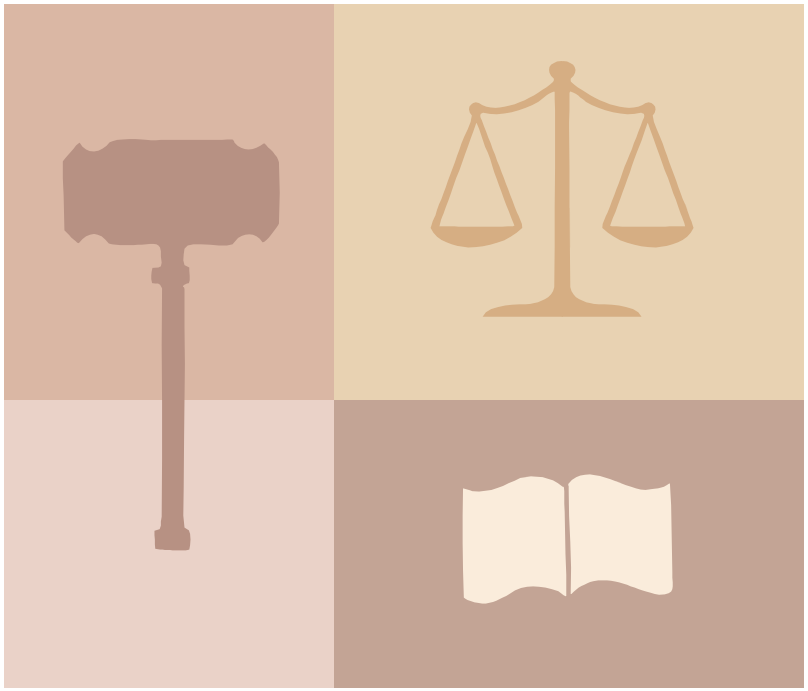
Why Ethics?

- Integral part of the success of your career
- Integrity can be our most valuable asset
  - Leads to trust in work relationships
  - Frees them from controls necessary when trust doesn't exist

The Public Welfare

- Engineers have a responsibility to advocate the public welfare
  - Expected by the public
  - Matter of ethical and legal duty
- Conflict of interest when your employer puts self interest above the public good
  - Cost of whistle blowing
  - Define “whistle blowing”

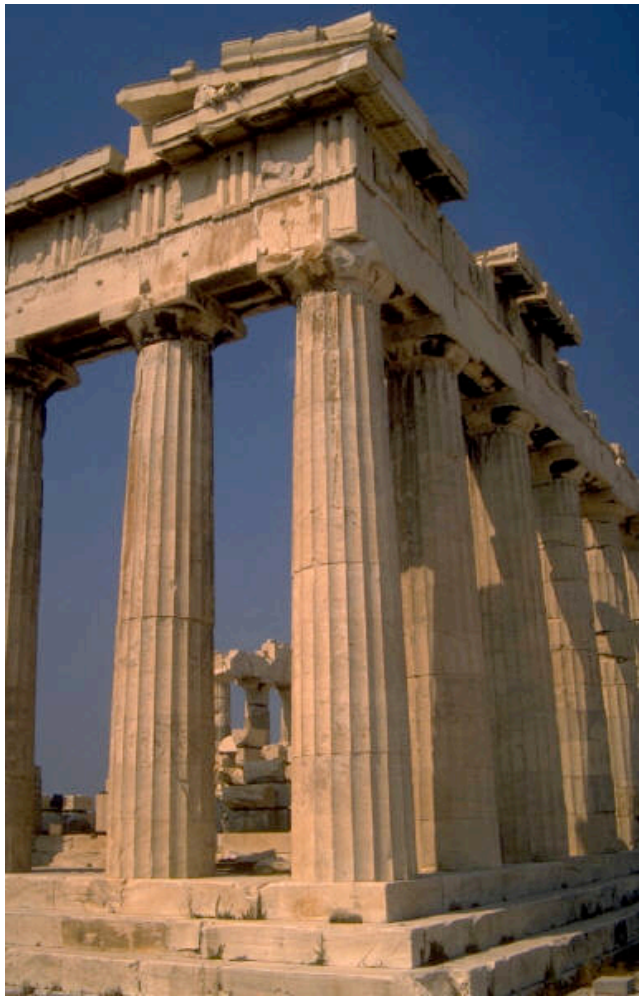
Visibility of Ethics in Engineering



- Admission standards and exams
- Code of Ethics
- Definition of Personal Misconduct
- Discipline and Complaints Committee
  - Dr. Peter Frise, Mechanical Engineering
- Duty to Report

Roots of Ethics in Philosophy

- **Aristotle** (384-322 BCE)
  - Character and virtue
- Focused on the moral character of the individual
- Defined proper function of individuals
  - Acting virtuously over time in all aspects of life
- Development of moral character will prepare the individual for ethical challenges



Immanuel Kant (1724-1804)

- Duty and ethics
  - Not concerned with character
- Duty to act ethically
  - Follow one's conscience and no other inclinations
- Duties are absolute and unconditional
  - Telling the truth
- Treating others with respect is an extension of Kant's philosophy

John Stuart Mill (1806-1873)

- Utilitarianism
- Actions are ethical if they promote maximum happiness
  - Focused on the consequences of decisions
- No concern about the means to achieve maximum happiness
  - End justifies the means
  - Principles, duties, character of the decision maker do not apply

PEO Code of Ethics

- Devotion to high ideals of honour and professional integrity
  - Aristotle - moral character
- Duty to the public welfare is paramount
  - Kant – duty
- Fairness to associates, employers, clients, subordinates, and employees
  - Mill – consequences of decisions

Importance of Standards

- Ethical standards include
  - Legal requirements
  - Code of Ethics
  - Moral and personal values
- Standards are necessary to determine whether a situation involves and ethical issue
- Ethical issues can be complex and difficult
  - Standards help to understand and manage them

Standards Examples

- Standards should be easily understood and compelling
- Personal conscience
- Law
- Ethics codes
  - PEO has a code of ethics

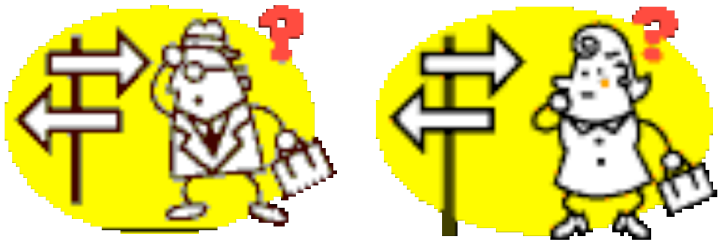
PEO Code of Ethics

- Hold duty to public as paramount
- Be fair and loyal to stakeholders
- Have high ideals of professional integrity
- Be faithful agents, who maintain confidentiality
- Avoid or disclose conflict of interest situations
- Be honourable to the practitioners and the engineering profession
- Expose unethical conduct by other engineering practitioners

- ***What if we imposed this code on you as student engineers?***

Ethical Decision Making

- Step 1: Identify the ethical issue(s)
- Step 2: Identify he relevant stakeholders
- Step 3: Interpret the facts
- Step 4: Evaluate the information
- Step 5: Set realistic objectives
- Step 6: Identify options for meeting your objectives
- Step 7: Evaluate your options
- Step 8: Justify your decision



Passing the "Ethics Test"

- Is it honest?
- Is it fair and balanced?
- Does it fit the mission of the organization involved and my moral conscience?
- Can I justify it publicly?
- Have I *walked* the ethics *talk*

Mini Case Studies

- The articles on the website pose ethical issues that you could easily encounter during your career
- Ponder them for tutorial
  - We will discuss one