

# Engineering Ethics

See Canvas for due date

**Purpose:** The purpose of this assignment is for you to analyze issues in professional ethics and to demonstrate an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgements, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts.

**Skills:** This assignment is designed for you to investigate, synthesize and communicate to others analysis of issues in professional ethics, ethical and professional responsibilities as noted in the context above. In this assignment, you will:

- Read the assigned materials related to engineering codes of ethics
- Analyze issues in professional ethics
- Demonstrate an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgements, which must consider the impact of engineering solutions in
  - global,
  - economic,
  - environmental and
  - societal contexts.

**Tasks** To complete this assignment you should

1. Read the following published codes of engineering ethics and professional responsibilities:
  - a. ASCE Code of Ethics <https://www.asce.org/code-of-ethics/>
  - b. NSPE <https://www.nspe.org/resources/ethics/code-ethics>
  - c. NCEES see FE Handbook section on ethics and the Model Rules, Section 240.15 Rules of Professional Conduct <https://ncees.org/wp-content/uploads/ModelRules-2017.pdf>
2. Consider the context in which civil engineers design, maintain and operate infrastructure by choosing two contexts in which infrastructure plays a role in the lives of others. Do this by choosing two real life contexts from the UST Under-told Stories project. Be certain to pick two stories from different categories:
  - a. Disaster Aftermath and Recovery
    - i. <https://undertoldstories.stthomas.edu/one-year-after-the-earthquake/>
    - ii. <https://undertoldstories.stthomas.edu/pakistan-still-grappling-with-flood-aftermath/>
    - iii. <https://undertoldstories.stthomas.edu/typhoon-of-aid-hits-disaster-area-in-philippines/>
    - iv. <https://undertoldstories.stthomas.edu/after-the-collapse/>
    - v. <https://undertoldstories.stthomas.edu/haiti-hurricane-relief/>
    - vi. <https://undertoldstories.stthomas.edu/thailand-rebuilds-after-tsunami/>
    - vii. <https://undertoldstories.stthomas.edu/tsunami-recovery-in-sri-lanka/>
    - viii. <https://undertoldstories.stthomas.edu/pakistan-earthquake-recovery/>
  - b. Water access

- i. <https://undertoldstories.stthomas.edu/how-off-grid-navajo-residents-are-getting-running-water/>
      - ii. <https://undertoldstories.stthomas.edu/can-water-atms-solve-indias-water-crisis/>
      - iii. <https://undertoldstories.stthomas.edu/indias-population-strains-water-supply/>
      - iv. <https://undertoldstories.stthomas.edu/821/>
      - v. <https://undertoldstories.stthomas.edu/in-ethiopia-clean-water-never-a-given/>
    - c. Building
      - i. <https://undertoldstories.stthomas.edu/rebuilding-nepals-temples/>
      - ii. <https://undertoldstories.stthomas.edu/navajo-nation-does-solar-power-offer-a-brighter-future-for-off-the-grid-residents/>
      - iii. <https://undertoldstories.stthomas.edu/nicaraguas-controversial-mega-canal-project/>
    - d. Climate Change and the Environment
      - i. <https://undertoldstories.stthomas.edu/tackling-indias-towering-landfills-takes-cultural-innovation/>
      - ii. <https://undertoldstories.stthomas.edu/fighting-to-breathe-in-the-worlds-most-polluted-city/>
      - iii. <https://undertoldstories.stthomas.edu/pakistan-still-grappling-with-flood-aftermath/>
3. Place yourself forward ten years and imagine that you are a professional engineer and that you are writing to inform engineers in your professional society who are interested in these case studies. Succinctly summarize your response to the two case studies that you picked while you consider the persons whose lives were affected in the under-told stories. You are constructing a response which for an active list-serve discussion, so limit the narrative and consider bullet pointing items, when appropriate. For each case study identify and discuss the following:
- a. What are the issues in this under told story?
  - b. Who are the stakeholders?
  - c. What is the concrete experience of each stakeholder? (Describe)
  - d. What are your observations? (Interpret)
  - e. Which abstract engineering ethics/professional practice issues apply? (Apply)
  - f. How do the theoretical constructs help solve the problem or make decision? (Evaluate)
4. Finally, for each case study construct a succinct but reflective memo for the instructor demonstrating your ability to recognize ethical and professional responsibilities in engineering situations and to make informed judgements, which must consider the impact of engineering solutions in each of the following areas. That is, discuss how the case study is related to
- a. Global context
  - b. Economic context
  - c. Environmental context and
  - d. Societal contexts.

Criteria for Success:

Hand in the typed response by the Canvas due date. Include the following rubric when you hand in.

Professional Engineering Licensure

| Criteria  | Pts    |
|---|--------|
| Professional Engineering Society list-serve response (appropriate tone and construction for a professional engineer) For 2 case studies complete the following: | 2      |
| • What are the issues in this under told story?   | 2      |
| • Who are the stakeholders?   | 2      |
| • What is the concrete experience of each stakeholder? (Describe)   | 2      |
| • What are your observations? (Interpret)   | 2      |
| • Which abstract engineering ethics/professional practice issues apply? (Apply)   | 2      |
| • How do the theoretical constructs help solve the problem or make decision? (Evaluate)   | 2      |
| Discuss how each case study is related to the following for both case studies (use appropriate tone and construction for demonstrating knowledge to faculty)    | 2      |
| • Global context  | 2      |
| • Economic context  | 2      |
| • Environmental context and   | 2      |
| • Societal contexts.  | 2      |
|   |        |
| Total   | 24 pts |