Environmental Engineering: A Career Choice

Dr. Enos C. Inniss
Assistant Professor, Dept. of Civil and Environmental Engineering
University of Texas at San Antonio
Engineering Training...

- Solve technical problems following a particular five (5) step method...

1. Define what is given. *(GIVEN)*

2. Determine what is needed. *(REQUIRED)*
Engineering Training...

3. Come up with an approach for solving the problem. (METHOD)

4. Work out the solution(s) to the problem. (SOLUTION)

5. Review whether the solution makes sense.
What does an Environmental Engineer Do? So what happens…

- After you put garbage out?

- After you flush your toilet?

- After you turn on the car? Before you turn on the lights in your home?
What does an Environmental Engineer Do?

Like with other engineering disciplines, the problems which are addressed take on the nature of the discipline...

I.e., Environmental Engineers deal with problems which are environmental in nature.
Solid Waste Management
Solid Waste Management
Air Pollution Control

(a) Cold-Side Electrostatic Precipitator

(b) Hot-Side Electrostatic Precipitator
Onsite Wastewater Treatment
Water Pollution Control
What skills are useful to an Environmental Engineer...

- **Math**
  - get as much as you can in high school;
  - Calculus is the first “required” class of an engineering program of study

- **Science (mainly chemistry and physics)**
  - get as much as you can in high school;
  - makes up two of the early engineering requirements in college (Fundamental courses)

- **Other Engineering Fundamentals**
  - Ground; soil properties, behavior, interactions - Structural Integrity
  - Fluid movement - physical operations

- **Communication**
  - good public speaking skills -- good interpersonal skills
  - desire to share your knowledge with others -- able to work well with others
Engineering Training...

- **B.S.** -- Bachelor of Science
- **E.I.T.** -- Engineer in Training
- **M.S.** -- Master of Science
- **Ph.D.** -- Doctor of Philosophy
- **P.E.** -- Professional Engineer
Environmental Engineering Concerns

- Leaky storage tanks
- Volatile compounds
- DNAPL pool
- City water
- Residence with septic system
- Statue cow
- Coal firing plant

Air quality

Solid and hazardous waste management

Water quality
Pumps

- Purpose?
- How does it operate?
- How is it designed and constructed?
Piping Systems

➢ Purpose?
➢ How does it operate?
➢ How is it designed and constructed?
Water Tower

- Purpose?
- How does it operate?
- How is it designed and constructed?