Outline: Lecture 2

Date: March 31, 2011
Topic: Assurance and Security

1. Discussion: examples of failures of systems
2. Requirements: what the system is to do
3. Policy: the definition of security
4. Assurance
   a. Trust, trustworthiness
   b. Assurance: confidence that a system meets its requirements
   c. Security assurance: confidence that a system meets its security requirements
5. Types of assurance problems
   a. Requirements definitions, omissions, mistakes
   b. System design flaws
   c. Hardware flaws, such as wiring and chip flaws
   d. Software flaws, program bugs, compiler and library bugs
   e. System use, operation errors, inadvertent mistakes
   f. Willful system misuse
   g. Hardware, communication, or other equipment malfunction
   h. Environmental problems, natural causes, and acts of God
   i. Evolution, maintenance, faulty upgrades, and decommissions
6. Requirements in assurance
7. System life cycle
   a. Assurance in policy
   b. Assurance in design
   c. Assurance in implementation
   d. Assurance in operation (administration)
8. Developing software