Software Engineering: What and Why?

CS 2720

Lecture 1.2
Define *software engineering*.

According to **ISO/IEC/IEEE 24765-2010**:

*Software Engineering*: 1. the systematic application of scientific and technological knowledge, methods, and experience to the design, implementation, testing, and documentation of software.

2. the application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software
Note some of the items in the ISO/IEC/IEEE definition:

- systematic
- disciplined
- quantifiable
- application of scientific and technological knowledge, methods, and experience
- development, operation, and maintenance
- design, implementation, testing, and documentation
Why Software Engineering?

What are some ways that “professional” software development differs from “personal” software development?

How can software engineering help us manage these differences?
Kung, in *Object-Oriented Software Engineering* (p. 3), lists the objectives of software engineering as:

- “...significantly increasing software productivity (P) ...”
- “…and quality (Q) ...”
- “…while reducing software production and operating costs (C) ...”
- “…and time to market (T).”
How can software engineering affect PQCT?