

Software Engineering II

Lecture 2

Capability Maturity Model

- The Capability Maturity Model (CMM) is a methodology used to develop and refine an organization's software development process. The model describes a five-level evolutionary path of increasingly organized and systematically more mature processes.

Level 1

Level 1 – Initial: The software process is characterized as ad hoc
. Few processes are defined, and success depends upon
individual effort

Level 2

Level 2 – Repeatable: Basic project management processes are established to track cost, schedule, and functionality. The necessary project discipline is in place to repeat earlier successes on projects with similar applications

Level 3

Level 3 – Defined: The software process for both management and engineering activities is documented, standardized, and integrated into an organizational software process. All projects use a documented and approved version of the organization's processes for developing and supporting software

Level 4

Level 4 – Managed: Detailed measures for software process and product quality are controlled. Both the software process and products are quantitatively understood and controlled using detailed measures

Level 5

Level 5 – Optimizing: Continuous process improvement is enabled by qualitative feedback from the process and from testing innovative ideas and technologies

Software Life-Cycle Steps

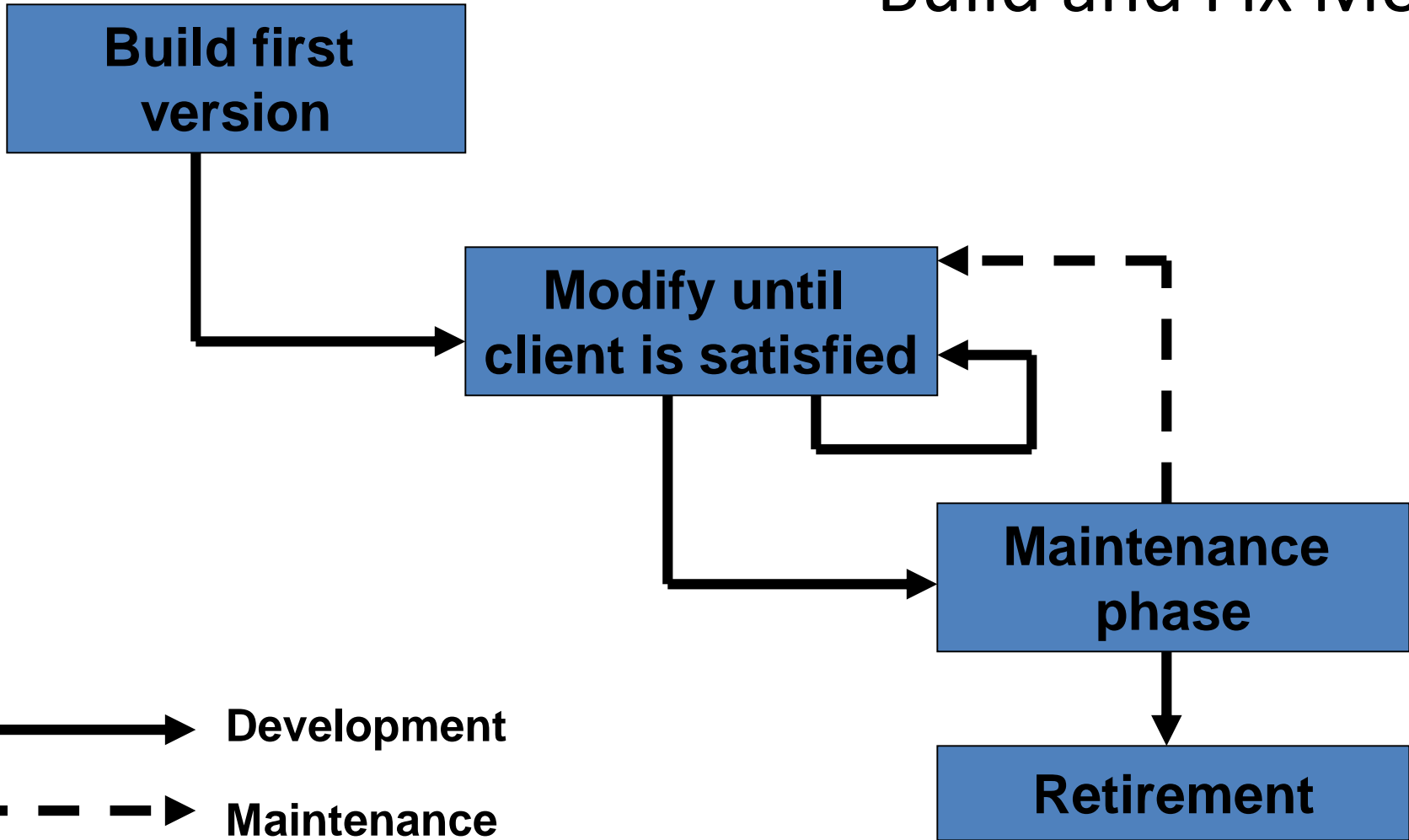
Life-cycle model (formerly, process model)

- Requirements phase
- Specification phase
- Design phase
- Implementation phase
- Integration phase
- Maintenance phase

Different Lifecycle Models

- Build-and-fix model
- Waterfall model
- Rapid prototyping model
- Incremental model
- Extreme programming
- Spiral model
- Object-oriented life-cycle models

Build and Fix Model



**Build first
version**

**Modify until
client is satisfied**

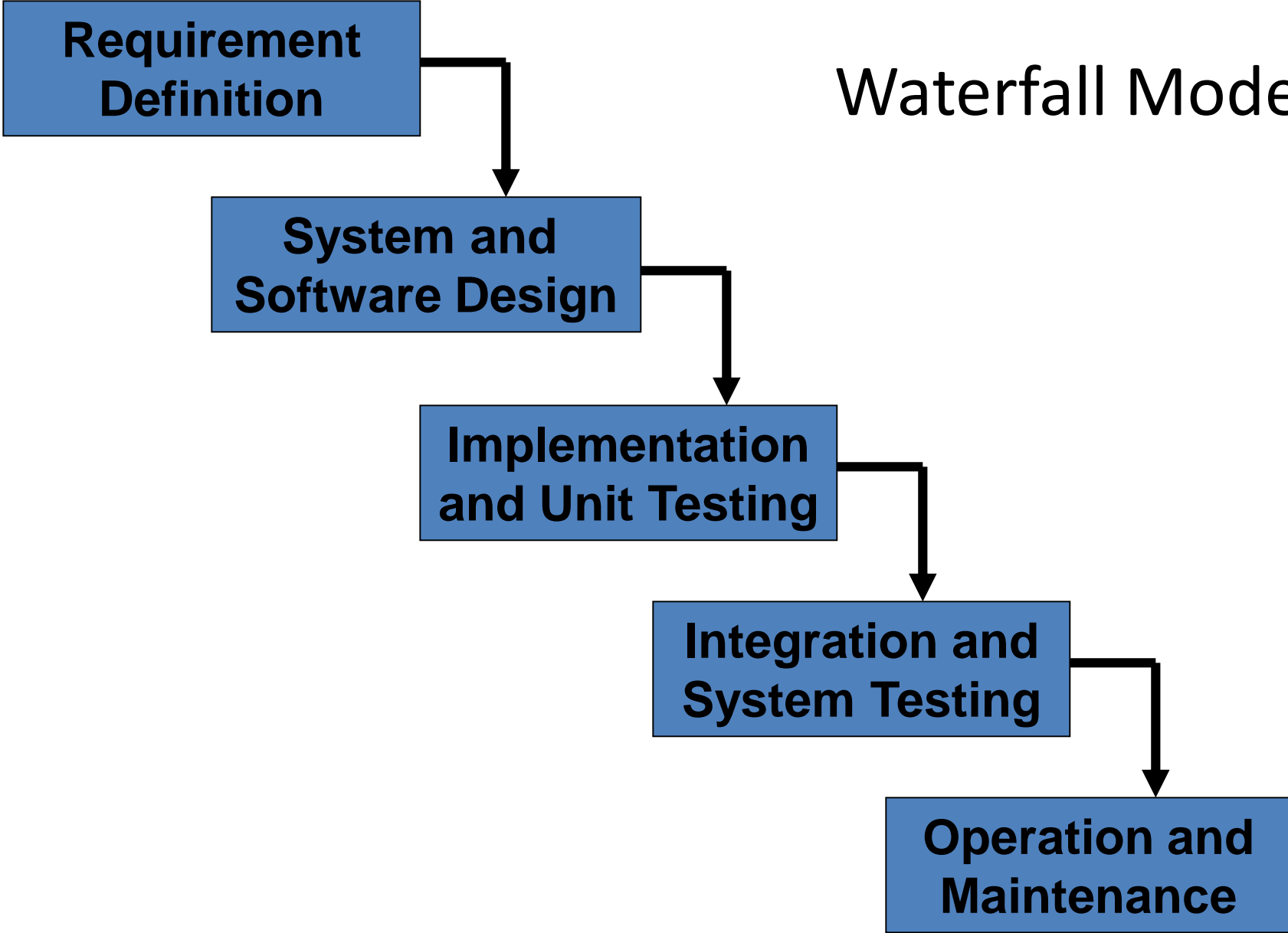
**Maintenance
phase**

Retirement

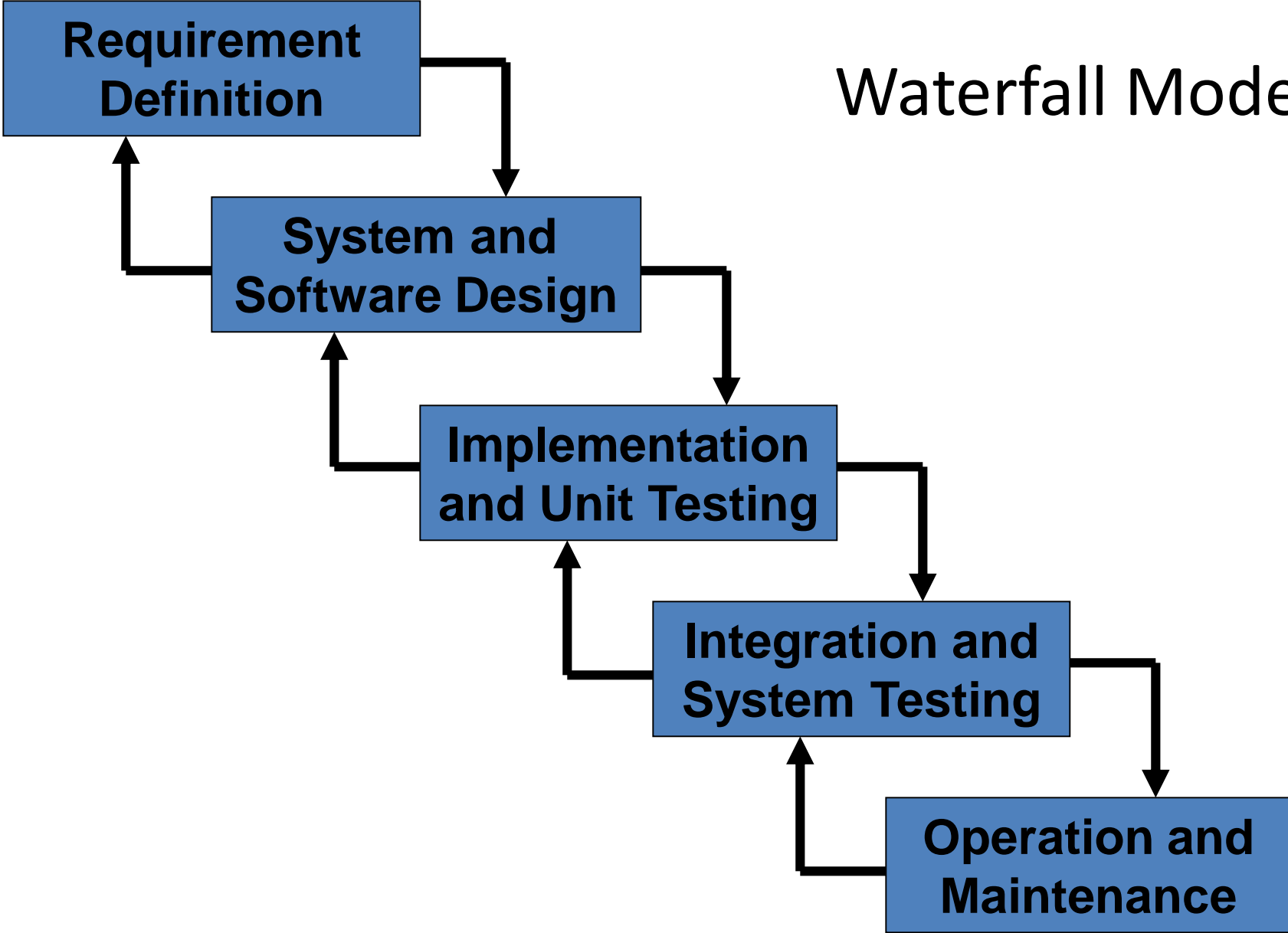
Development

Maintenance

Waterfall Model



Waterfall Model



Rapid Prototyping Model

