OOAD: Introduction

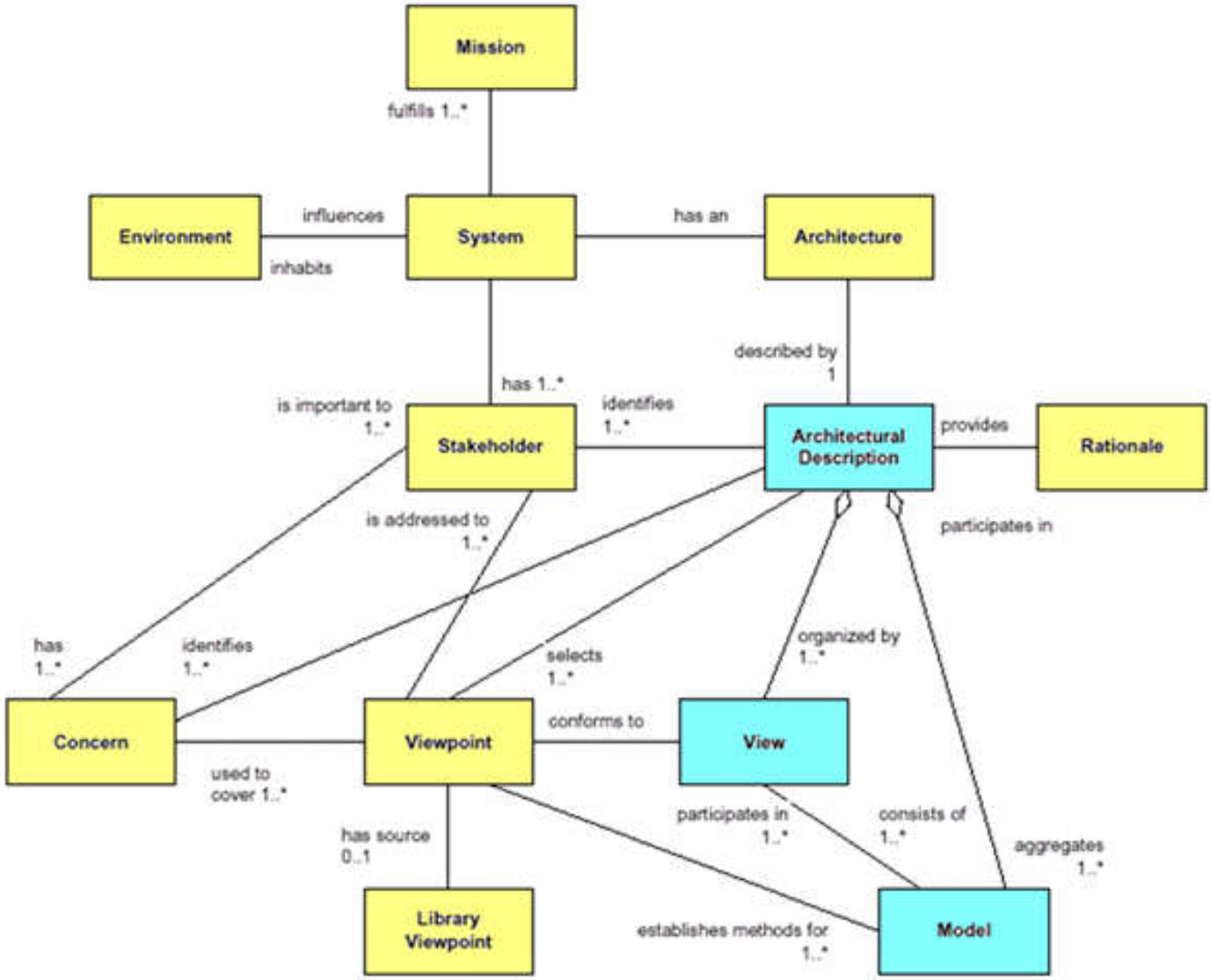
Presenter: Dr. Ha Viet Uyen Synh.

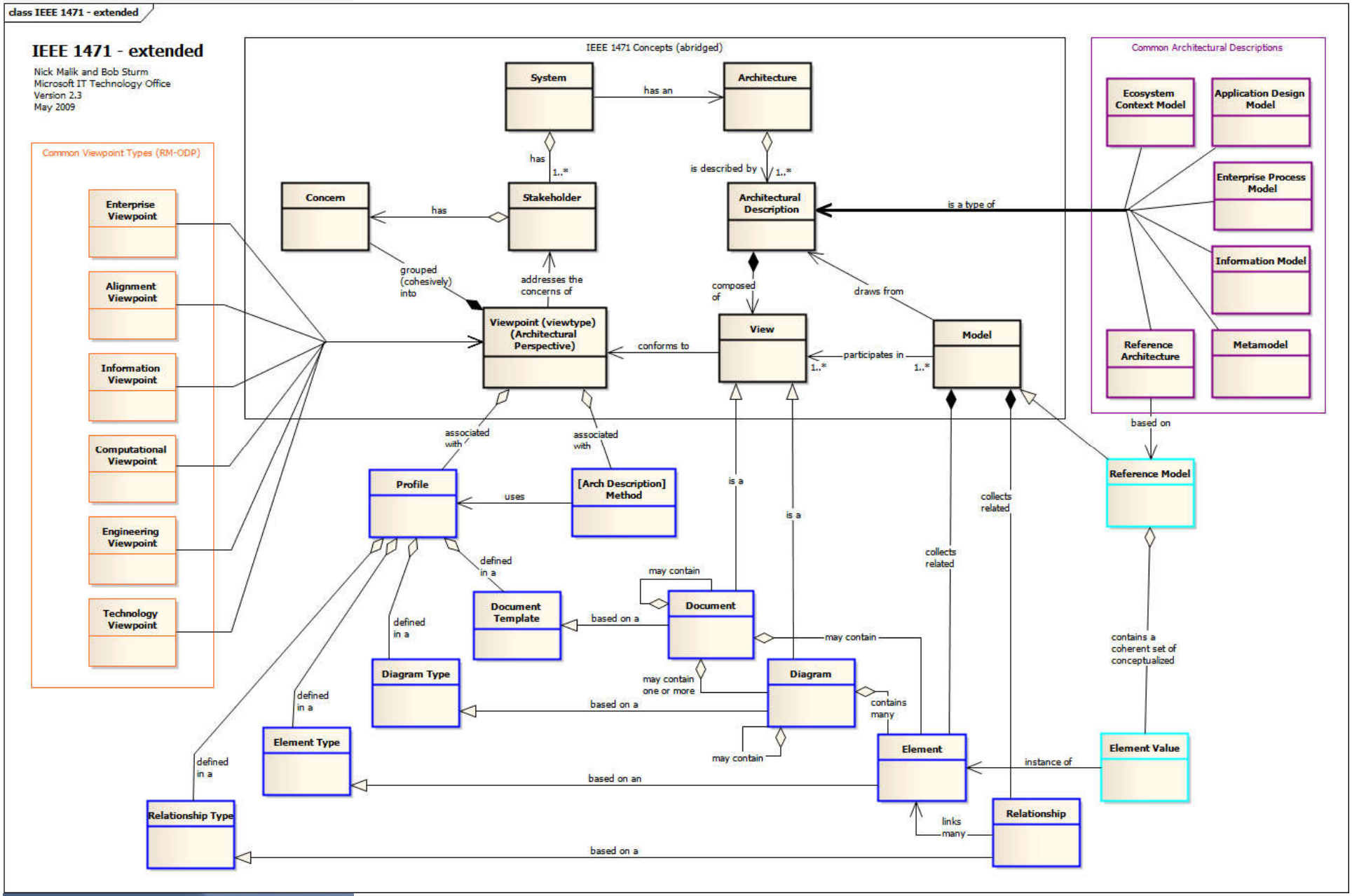
Software Engineering/Computer Science

Computer Science is concerned with the ***theories and methods*** which underlie computers and software systems.

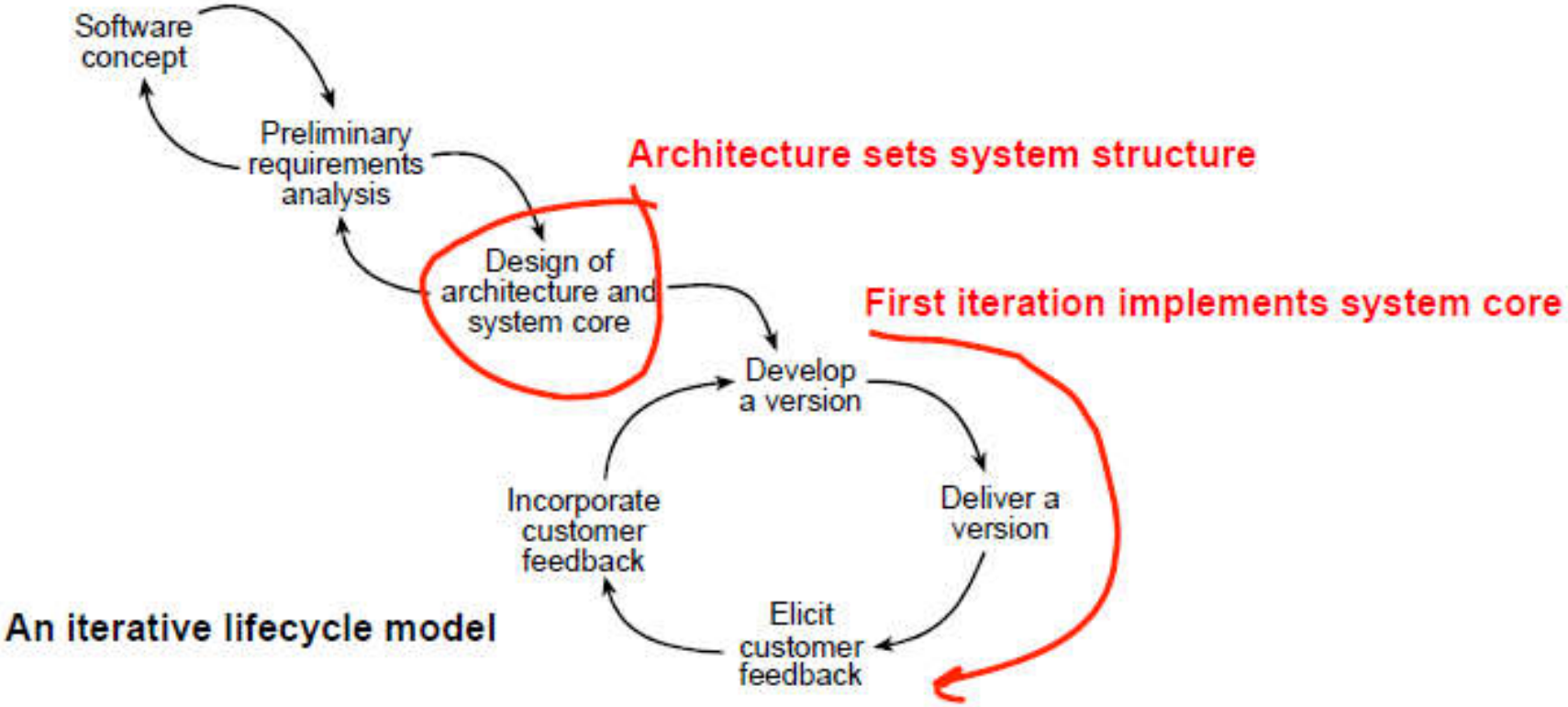
Software Engineering is concerned with the ***practical problems*** of producing software.

Conceptual Model for OOAD



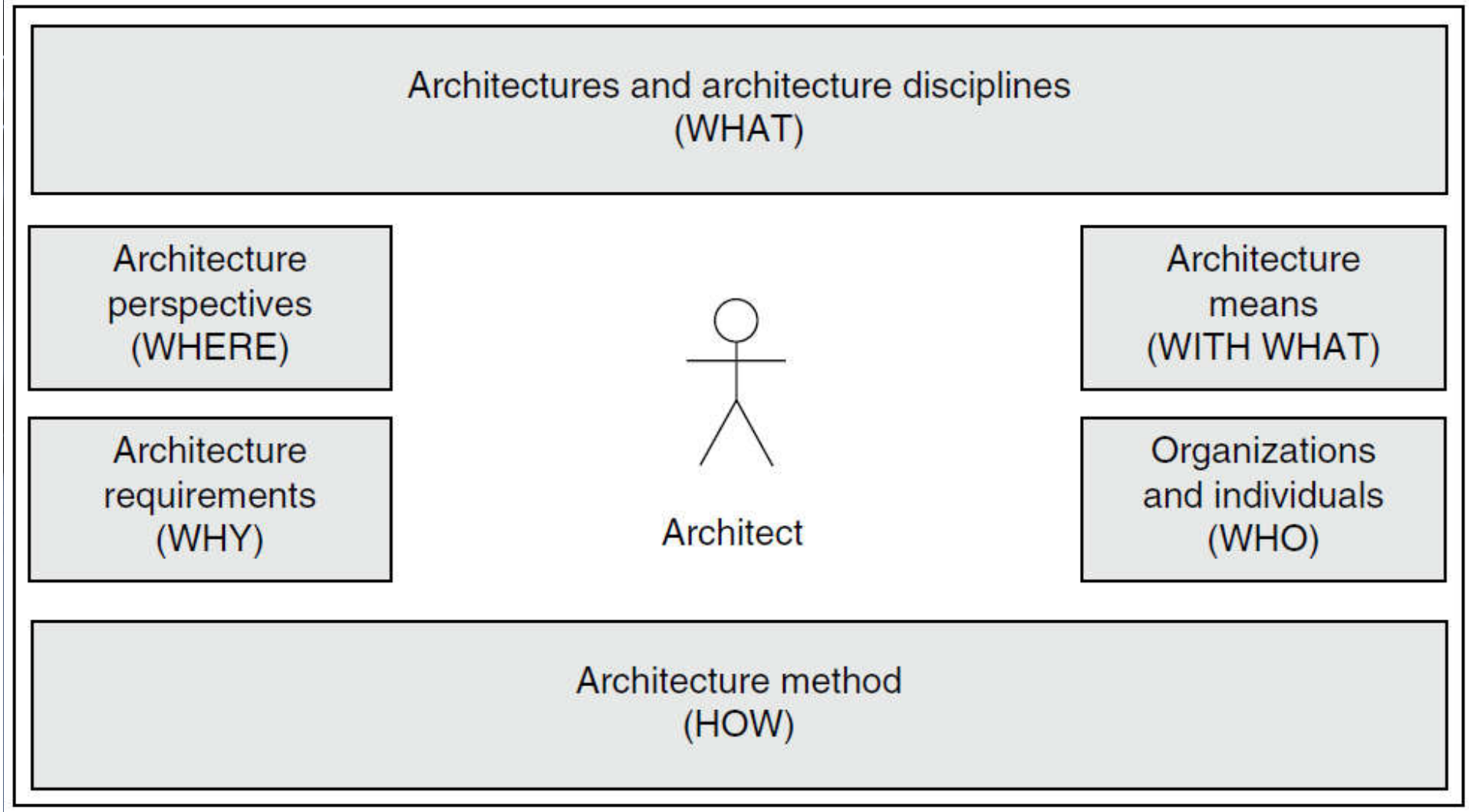

class IEEE 1471 - extended
IEEE 1471 - extended
Nick Malik and Bob Sturm
Microsoft IT Technology Office
Version 2.3
May 2009
IEEE 1471 Concepts (abridged)
Common Architectural Descriptions
Common Viewpoint Types (RM-ODP)
System
has an
Architecture
has
1..*
is described by
1..*
Concern
has
Stakeholder
Architectural Description
is a type of
grouped (cohesively) into
addresses the concerns of
composed of
draws from
Viewpoint (viewtype) (Architectural Perspective)
conforms to
View
participates in
1..*
1..*
Model
Enterprise Viewpoint
Alignment Viewpoint
Information Viewpoint
Computational Viewpoint
Engineering Viewpoint
Technology Viewpoint
Ecosystem Context Model
Application Design Model
Enterprise Process Model
Information Model
Reference Architecture
Metamodel
based on
Reference Model
associated with
associated with
Profile
uses
[Arch Description] Method
is a
is a
collects related
collects related
defined in a
may contain
Document Template
based on a
Document
may contain
defined in a
Diagram Type
may contain one or more
Diagram
contains many
may contain
defined in a
Element Type
based on a
defined in a
Element
instance of
Element Value
contains a coherent set of conceptualized
based on an
Relationship Type
links many
Relationship
based on a

Development lifecycle

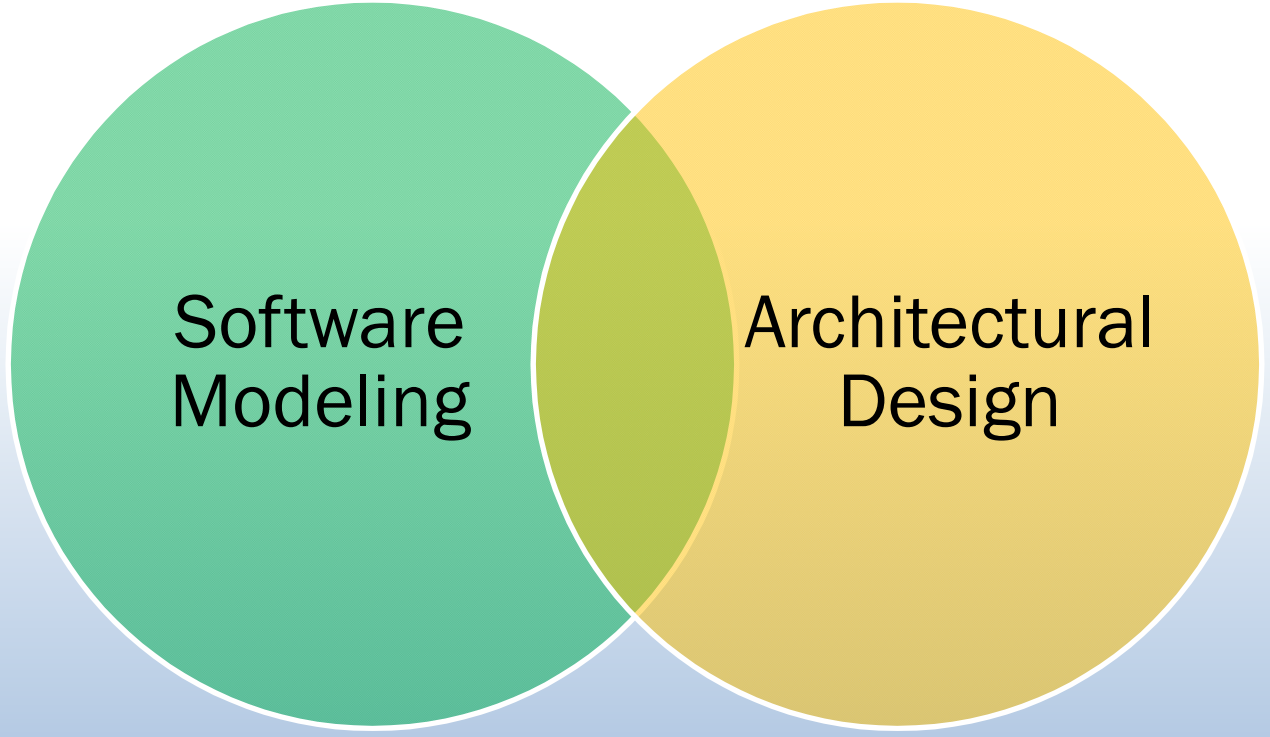


An iterative lifecycle model

Overview of the architecture orientation framework



Overview



Software Modeling

Use Case Modeling

Static Modeling

Object and Class Structuring

Dynamic Interaction Modeling

Finite State Machines

State-Dependent Dynamic Interaction Modeling

Architectural Design

Software Subsystem Architectural Design

Designing Object-Oriented Software Architectures

Designing Client/Server Software Architectures

Designing Service-Oriented Architectures

Designing Component-Based Software Architectures

Designing Concurrent and Real-Time Software Architectures

Designing Software Product Line Architectures

How course outcomes are assessed?

Quizzes	10%
Lab Exercises	20% (Group)
Midterm Exam	30%
Final Exam	40%

Lab. exercises

In each lab. meeting, each group has 15’ to present and 15’ to ask and answer.

Any Questions?

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