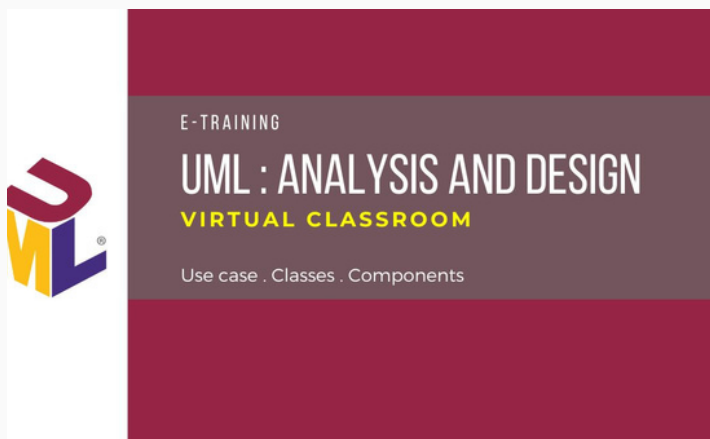


# Module : UML - analysis and design

Want to learn how to design object-oriented applications with UML? By following this UML training, you will be able to: utilize use cases, highlight and represent entities with classes, detail interactions between objects, etc.

**Prerequisites** : Programming language, OOP concepts.



**Ways to take this course:** Online Instructor Led  
Online self-paced  
Video On Demand

**Video conference tool:** ZOOM

**Duration:** 21 H (3 days)

## The dynamic model

Sequence diagrams  
Interaction diagrams  
Activity Diagram  
State diagrams  
Timing diagrams  
Lab: mini-project.

## UML in Software Engineering

Software development cycles  
UML and the V cycle  
UML in iterative development

## OUTLINE

### Object-oriented approach

Procedural approach vs OOP  
Classes and objects  
Attributes, methods, constructor  
Static attributes and methods  
Encapsulation mechanism  
Inheritance, polymorphism  
Interfaces and abstract classes  
Relationships between classes  
Exception handling  
Generic Classes  
Design patterns  
Lab: from entities to classes

### Introduction to UML

Usefulness of modeling  
UML History  
UML 2 diagrams  
UML elements : symbols, notes, etc.  
Modeling Tools

### Use cases

Definition  
User stories, product backlog  
Actors, system, use cases  
Relationship between use cases  
Description and scenarios  
Use cases: best practices  
Lab: mini-project.

### The static object model

Diagrams: classes, objects, components  
Deployment Diagram  
Diagram of composite structures  
Relationships between classes  
Package Diagrams  
Relationships between packages  
Lab: mini-project.