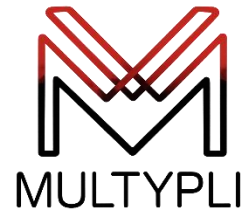




Course Syllabus



Course:

Hands-On MBSE

-By Multypli LLC

Course Description:

This live online, instructor-led course teaches Model-Based Systems Engineering (MBSE) by covering foundational principles, the SysML language as employed for system architecture modeling, and live demonstrations with hands-on exercises, using CATIA Magic. The last two weeks of this course are devoted to enhancing your practical MBSE skills by employing the SysML language and the CATIA Magic tool to build a consistent system architecture model.

This course is intended for students with a strong systems engineering background and an established systems engineering process; who want a hands-on course that teaches model-based system engineering SysML and CATIA Magic; or who want to earn a Saint Louis University Workforce certificate in MBSE using SysML and CATIA Magic. It is suitable for beginners but covers materials up to an intermediate level.

Course Structure:

The course is split up into two parts:

- MBSE Using SysML (~30 contact hours)
 - Live lessons that cover foundational MBSE principles, fundamental and intermediate SysML elements and diagrams, and modeling methodology
 - 16 total modules (lessons)
 - Lessons include guided architecture modeling demonstrations
- Hands-On MBSE Project (~10 contact hours)
 - An individual architecture modeling project that employs MBSE concepts and SysML elements and diagrams in the context of a realistic system development lifecycle
 - 4 total modules (lessons)

Topic Outline:

MBSE Using SysML

- Module 01: Course Overview
- Module 02: Introduction to MBSE, SysML Primer, and CATIA Magic Primer
- Module 03: Model-Based Principles and Concepts
- Module 04: Model Organization
- Module 05: Basic Structural Definition
- Module 06: Advanced Structural Definition
- Module 07: Interface Definition
- Module 08: Basic Activity Definition
- Module 09: Advanced Activity Definition
- Module 10: Basic State Machine Definition
- Module 11: Basic Interaction Definition
- Module 12: Model-Based Requirements
- Module 13: Use Case Definition
- Module 14: Model Integration
- Module 15: Parametric Definition
- Module 16: Model-Driven Architecture Analysis

Hands-On MBSE Project

- Project Part 01: Preparation and Conceptualization
- Project Part 02: Foundation and Development
- Project Part 03: Decomposition and Integration
- Project Part 04: Analysis and Demonstration

Planned Schedule:

- Course duration: 5 days
- Total contact hours: 40 (minus breaks)

Resources:

- This course is optimized for CATIA Magic / Cameo 2024x
- Access to a third-party web-based educational version of CATIA Magic System of Systems Architect will be provided for an additional fee