Bentley SYNCHRO 4D Professional

Course Objective

This course aims to equip participants with practical skills to build, manage, and deliver 4D/5D construction models using Bentley SYNCHRO tools. Participants will gain hands-on experience aligned with the **SYNCHRO 4D Professional Accreditation**, enabling them to confidently clear the certification and apply workflows on live projects.

Target Audience

This course is intended for **Project Planners, BIM Engineers, Construction Managers, 4D/5D Specialists, and Digital Construction Professionals** involved in planning and execution. It is also suitable for organizations adopting **4D planning, cost integration, and field execution workflows** using Bentley SYNCHRO.

Course Outcomes

Upon successful completion of this course, participants will be able to:

1. Set up and manage SYNCHRO projects using Control, including user roles, iModels, documents, and collaboration workflows.

2. Create accurate 4D construction simulations by integrating 3D models with schedules, resources, and appearance profiles.

3. Develop 5D models by applying cost codes, quantity takeoffs, and earned value principles.

4. Generate professional reports, animations, and field updates, and demonstrate readiness for the **Bentley SYNCHRO 4D Professional Accreditation**.

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Module 1: Introduction & Accreditation Overview

1.1 Overview of SYNCHRO Ecosystem
1.2 Purpose of SYNCHRO Accreditation
1.3 Accreditation Levels & Exam Structure
1.4 Competency Areas Required
1.5 Training Roadmap & Learning Path

Module 2: SYNCHRO Control Fundamentals

2.1 Introduction to SYNCHRO Control
2.2 Creating and Managing Projects

2.3 User Roles, Permissions, and Team Management

2.4 iModel Creation & Synchronization

2.5 Importing BIM Models (IFC, Revit, DGN, NWD, etc.)

2.6 Document Management & Version Control

2.7 Plan Set PDFs & Sheet Navigation

2.8 Model Viewer Tools & Markup

2.9 Introduction to Form Designer

Module 3: SYNCHRO 4D Pro – Interface & Core Concepts

3.1 Interface Overview

3.2 Understanding Views (3D, Gantt, Task List)

3.3 Work Breakdown Structure (WBS)

3.4 Calendars, Resources & Data Organization

3.5 Control ↔ Pro Data Exchange

Module 4: Working with Models & Schedules

4.1 Supported Model Formats & Import Best Practices

4.2 Importing and Structuring 3D Models

4.3 Importing Schedules (P6, MSP, Excel)

4.4 Schedule Link Updates & Synchronization

4.5 Handling Design Revisions & Change Management

Module 5: Building the 4D Model

5.1 Selecting & Managing 3D Objects

5.2 Task Creation and Management

5.3 Object-to-Task Assignments

5.4 Appearance Profiles & Construction Logic

5.5 Rules-Based Task Assignments

5.6 Productivity-Based Linking Techniques

Module 6: 4D Simulation & Validation

6.1 Time Analysis & Playback Controls

6.2 Building and Editing 4D Animations

6.3 Temporary Works & Sequencing Visualization

6.4 Detecting 4D Conflicts

6.5 Simulation Review & Validation Workflows

6.6 Exporting 4D Animations

Module 7: Introduction to 5D Modeling

7.1 Understanding 5D Concepts

7.2 Cost Resource Types & Structures

7.3 Building Cost Code Frameworks

7.4 Quantity Takeoff (QTO) Workflows

7.5 Cost Loading Schedules

7.6 Earned Value Fundamentals (BCWS, BCWP)

Module 8: SYNCHRO Modeler – Cost & Design Management

8.1 Overview of Modeler Functions

8.2 Creating Custom Cost Codes

8.3 Property Mapping & Classification

8.4 Rules-Based Cost Assignments

8.5 Integrated Design Change Workflows

8.6 Managing Revisions & Model Variants

Module 9: Scripting & Automation in SYNCHRO

9.1 Script Editor Overview

9.2 Understanding the SYNCHRO Script Structure

9.3 Automating Common Tasks

9.4 Status-Based Color Coding Automations

9.5 Script-Based Resource Assignments

9.6 Modifying & Debugging Existing Scripts

Module 10: Reporting & Deliverables

10.1 Standard Reports in SYNCHRO

10.2 Creating Comparison Reports (Baseline vs Current)

10.3 Generating 4D Snapshots & Visual Reports

10.4 Exporting Data to PDF, Excel & Video

10.5 Issue Tracking & RFI Integration (Control)

Module 11: SYNCHRO Field – Construction Execution

11.1 Introduction to Field Application

11.2 Mobile Navigation of 4D Models

11.3 Field Form Workflows (Daily Logs, Safety, QA/QC)

11.4 Progress Tracking & Status Updates

11.5 Capturing Photos & Issues

11.6 Online / Offline Synchronization