

Tekla Structures Steel Detailing

Target Audience

This course is ideal for structural engineers, steel detailers, fabricators, and construction professionals who want to master Tekla Structures for steel modeling, detailing, and documentation. It is also suitable for BIM coordinators and drafters seeking to work with accurate 3D steel models in a professional project environment.

Course Objective

The objective of this course is to provide participants with comprehensive, hands-on skills in Tekla Structures for steel structural modeling and detailing. Participants will navigate the Tekla interface, build steel models with connections, perform clash detection, produce fabrication and assembly drawings, and manage project reports — all within a real-world BIM workflow.

Course Outcome

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

- Navigate the Tekla Structures interface and understand its role in infrastructure and BIM projects
- Build accurate 3D steel structural models including beams, columns, and complex connection operations
- Apply steel connections, run clash detection, and resolve model conflicts
- Create and edit general arrangement, assembly, and part drawings for fabrication and construction
- Generate professional reports including bills of materials and numbering sequences
- Coordinate and collaborate across multi-discipline BIM models using Tekla's tools

Course Outline

The course comprises 40-hours of theory and labs and is divided into 6 different Modules. Each chapter will be followed by hands-on lab exercises to reinforce learning and gauge understanding of the topics covered.

Table of Contents: -

Module 1 - Understanding Tekla: Navigating the Interface and Impact in Infrastructure

- Introduction to Tekla Structures and its role in BIM and infrastructure projects.
- Tekla interface overview: ribbon, toolbars, views, and model tree.
- Creating and managing a new Tekla project environment.
- Understanding grids, reference points, and work planes.
- Tekla vs. other BIM tools: key differences and advantages

Module 2 - Steel Structural Modelling and Connection Operations

- Modeling steel beams, columns, braces, and plates
- Assigning profiles, materials, and section properties
- Applying standard and custom steel connections (bolted, welded, moment)
- Using the Connection Catalog and component library
- Editing and modifying existing structural members and connections
- Handling complex geometries and curved structures

Module 3 - Exploring Steel Connections, Clash Detection & Drawing Creation

- Advanced steel connection types and parametric settings
- Running clash detection and reviewing collision reports
- Resolving model clashes and updating connections accordingly
- Introduction to drawing creation: types, templates, and layout settings
- Generating general arrangement (GA) drawings from the 3D model
- Adding views, sections, and detail callouts to drawings

Module 4 - Tekla's Drawing Editing: General, Assembly & Part Drawings

- Editing and annotating general arrangement drawings
- Creating assembly drawings for workshop fabrication
- Producing part drawings with dimensions, marks, and bolt lists
- Customizing drawing templates and title blocks
- Batch printing and exporting drawings to PDF and DWG formats

Module 5 - Numbering, Reports & Bill of Materials

- Understanding the Tekla numbering system (prefix, start number, series)
- Running and managing model numbering sequences
- Generating bill of materials (BOM) and steel quantity reports
- Customizing and creating report templates
- Exporting reports and BOM data to Excel and external systems.

Module 6 - Project Coordination, IFC Export & Collaboration

- Importing and referencing IFC and DWG files from other disciplines
- Exporting Tekla models to IFC for cross-discipline coordination
- Using Tekla Model Sharing for multi-user collaboration
- Coordinating with Revit, Navisworks, and other BIM platforms
- Final project: complete steel structure model with drawings and reports