AI Tutor and Training

> **DRAFT - version 10.1.5**
>
> This page documents a feature currently in development for version 10.1.5. Content is subject to change before release.

The AI Designer Tutor is a built-in learning companion that runs structured lessons inside your live Designer session. Instead of watching videos or reading documentation, you learn FrameworX by building real objects alongside the Tutor — tags, devices, displays, and more — in your own Designer instance.

AI Integration AI Tutor and Training

Three Ways to Learn FrameworX

The Tutor is one of three learning channels. Each serves a different need:

Channel	Best For	How It Works
AI Designer Tutor	Hands-on building in your own Designer	Interactive lessons via MCP. The Tutor creates objects, verifies your work, and adapts to your pace. Runs in any Claude session connected to Designer.
Documentation	Reference depth and conceptual understanding	Full platform documentation at docs.tatsoft.com. Concepts, tutorials, how-to guides, and reference pages organized by module.
Video Training	Visual walkthroughs at your own pace	Structured video courses at training.tatsoft.com. Watch an expert build solutions step by step.

The Tutor knows about all three channels. When you ask a question that is better answered by documentation or video, the Tutor will point you there rather than trying to replicate that content.

What the Tutor Does

The Tutor runs curriculum lessons — short, focused sessions (typically 5–12 minutes) where you build something specific in your Designer. Each lesson has:

- **A defined scope** — what you will learn and what is out of scope. The Tutor stays on topic and redirects out-of-scope questions to the right lesson.
- **A demo throughline** — a small worked example (e.g., a mixing station with tanks and a mixer) that the Tutor builds alongside you.
- **Checkpoints** — observable states the Tutor verifies using MCP tools. When a checkpoint passes, you know the concept is solid.

Between lessons, or when no lesson is active, the Tutor works as a general FrameworX expert — answering questions, building objects, and helping with your own projects. Lessons are structured paths through the curriculum, not the only way to use the Tutor.

The Curriculum

Lessons are organized into three tiers:

Essentials — First-Run Competence

Fourteen lessons, approximately 90 minutes total. By the end you can model a plant, connect a device, configure alarms and historian, run the runtime, write a script, build a display, add a user, and deploy to production. Lessons follow a fixed order and traverse the four platform pillars: Foundation, Industrial, Business, Interaction.

ID	Title	Duration	Description
E0	What is FrameworX?	3–5 min	Platform positioning and the four-pillar mental model.
E1	Inside a FrameworX Solution	6–8 min	The solution as a self-contained project database; three surfaces.
E2	Designer Overview and Logon	5–7 min	Open Designer, log in, tour modules and panels.
E3	Working with Your AI Designer Tutor	3–5 min	How the Tutor works and where else to learn.
E4	UNS Triad: Tags, UserTypes, AssetTree	10–12 min	Model your plant with tags, one UserType, and the asset hierarchy.
E5	Devices: MQTT, OPC, PLC	10–12 min	Connect to industrial devices; DataExplorer for verification.
E6	Alarms Basic + Historian Intro	7–9 min	Configure an alarm and historize a tag.
E7	Running the Runtime	6–8 min	Launch runtime, observe live data, experience the payoff.

E8	Scripts Cameo	5–7 min	Write a simple server-side script with a live expression.
E9a	Displays: Canvas, Dashboard, Layouts	6–8 min	Two display kinds, page structure, runtime navigation.
E9b	Displays: Symbols and Components	6–8 min	Drag symbols from the library, bind to tags.
E9c	Displays: Basic Dynamics	6–8 min	Visibility, color, and position driven by tag values.
E10	Security Cameo	4–6 min	Add a user and assign a role.
E11	Installation and Production	6–8 min	Deploy to production: Windows Service, .NET 8, Docker.

Intermediate — Scaling a Real Solution

Fourteen lessons. Takes you from first-run competence to production-quality solutions. Covers UserType composition, full Historian and Alarms modules, Datasets, Reports, Scripts in depth, symbol authoring, advanced dynamics, themes, security policies, and version control. Ends with the Brewery Simulation integration lab — a capstone that ties everything together.

Advanced — Platform Mastery

Fourteen lessons. Deep platform internals: execution domains, online configuration edge cases, runtime object model, TagProviders, deployment profiles, multi-node architectures, performance tuning, CI/CD, Python/.NET integration, MCP Client, and ML.NET.

How to Start a Lesson

In any Claude session connected to FrameworX Designer, you can start a lesson in several ways:

- **By lesson ID:** “Start E4” or “Run the UNS Triad lesson.”
- **Resume:** “Continue where I left off.” The Tutor picks up from your last checkpoint.
- **By topic:** “Teach me the UNS from the ground up.” The Tutor maps your request to the best-fit lesson and confirms before starting.
- **Browse:** “What can I learn?” The Tutor summarizes the available tiers and suggests a starting point.

If you already know the material in a lesson, the Tutor will check — if the objects from the lesson already exist in your solution, it offers to skip ahead. Advanced users can move through familiar material quickly.

Progress Tracking

Your progress is tracked automatically on your local machine. Completed lessons and your current position are saved so you can resume across sessions.

- Progress is per-user on the machine. If you switch to a different computer or user account, progress starts fresh.
- No cloud sync, no account required. Everything is local.
- Progress file location: `My Documents\FrameworX\AITutor\tutor_progress.json`

During a Lesson

The Tutor follows a **frame build check** pattern for each section of a lesson:

1. **Frame** — one sentence on what this section does and why.
2. **Build** — the Tutor calls MCP tools to create objects in your Designer. You see changes appear in real time.
3. **Check** — the Tutor verifies the checkpoint via MCP. If everything looks right, you move on.

You can interrupt at any time:

- **Quick question** — ask anything mid-lesson. The Tutor answers, then offers to return to the lesson.
- **Switch to your own work** — tell the Tutor you want to work on your own project. The lesson pauses and you can resume later.
- **Leave entirely** — close the session. Your progress is saved at the last completed checkpoint.

Off-Curriculum Help

The Tutor is not limited to curriculum lessons. When you ask a question or request that does not match any lesson, the Tutor uses its general FrameworX expertise to help — answering questions, building objects, and pointing you to documentation or video when appropriate. This works the same whether or not a lesson is active.

Requirements

- FrameworX 10.1.5 or later installed
- AI Designer connected (Claude Desktop, Claude Code, or Coworker with the DesignerMCP connector)

- See MCP and Claude Setup for setup instructions