# Sumo22 Training Course

**dynamita** — PROCESS MODELING

This six online session course can be taken in three different ways:

➡ Introductory – First four sessions (700 USD)
➡ Advanced – Last four sessions (800 USD)
➡ Complete – All six sessions (1000 USD)

Each session will be 4 hours, from 10 AM to 2 PM EDT

## Includes
➡ A one-month Sumo22 license
➡ A one-month Digital Twin license

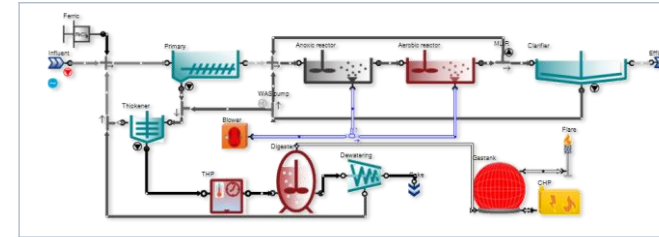## Register here, click on
➡ Course registration

## Program details
➡ next page

## Contact
➡ web: www.dynamita.com
➡ for more information: info@dynamita.com

## Modeling in Practice
in fundamentals and design applications



| Name | Energy center | Unit |
|---|---|---|
| Plantwide electric power demand | 257 | kW |
| CHP unit power generation | 142 | kW |
| Plant electric energy consumption | 6177 | kWh |
| Self sufficiency | 55 | % |

## Who will benefit?

New users/modelers should take the introductory part (first four sessions). Existing or experienced model users can start from session 3. All six can be taken for a complete overview of Sumo if desired.

➡ **Software familiarization**
  ➡ Learn how to use basic and advanced features and build process configurations
  ➡ Dynamic simulation set-up, Data plotting, Scenario analysis

➡ **Full plant model calibration**
  ➡ Wastewater characterization - Municipal and industrial, sludge feed, food waste
  ➡ Activated sludge and biofilm (including aerobic granular and MABR) systems
  ➡ BOD-removal/Nit-denit/Enhanced Biological Phosphorus removal/GHG model
  ➡ Predicting alpha factor for improved aeration design and modeling
  ➡ Modeling aerobic facultative lagoon (predict sludge buildup and dredging)
  ➡ Thermal hydrolysis, anaerobic digestion, and sidestream treatment
  ➡ Controllers: standard and ABAC, SRT control, AvN control, and NRCY control
  ➡ Energy/Cost module (Plant power demand, power generation, and self-sufficiency)
  ➡ Carbon footprint

➡ **Integrated Urban Watershed modeling**

➡ **Digital Twin for Process Improvement**

Interactive Training Course

| Time (EST) | Nov 2th | Nov 4th | Nov 8th | Nov 10th | Nov 15th | Nov 17th |
|---|---|---|---|---|---|---|
| 10:00 - 10:30 | Personal introduction, program overview, and introduction to good modeling practice | Nitrification, denitrification | What's new Sumo22, including IUWS | Biological Phosphorus removal - model, application, and constraints | Sidestream treatment - deammonification | P recovery and precipitation (Sumo2S) |
| 10:30 - 11:00 | | | | | | |
| 11:00 - 11:30 | Sumo22 - Setting up full plant for steady state and dynamic simulation | Modeling aerobic facultative lagoon (predict sludge buildup and dredging) | Chemical P - Iron and Alum | Controllers introduction, setup, and application | Complete energy and cost calculation - upgrade evaluation, self sufficiency | Carbon footprint and GHG estimation modeling |
| 11:30 - 12:00 | | | | | | |
| 12:00 - 12:30 | | Conventional versus Advanced digestion (Thermal hydrolysis), Post aerobic digestion | Aeration modeling - Diffuser versus mechanical, using aeration tool, alpha modeling | | | Introduction to Sumoslang - Biokinetic model, Plantwide, Process units |
| 12:30 - 13:00 | Wastewater characterization - data collection, reconciliation, and fractionation | | | Biofilm modeling - fundamentals and advanced setup | Pump and blower curve examples, sizing a blower | |
| 13:00 - 13:30 | | Clarifier modeling | | | | Digital twin - c-API, Python script, analysis, optimization, distributed and cloud runs |
| 13:30 - 14:00 | | | | | | |