

Catalogue de formation plant simulation

Basic course : Plant Simulation Basics, Methods, and Strategies

Description

The Plant Simulation Methods and Strategies course introduces Plant Simulation and its basic functionality to users of professional, standard or application licenses. Students will learn how to create, use and evaluate simulation models. The definition of custom logic (methods) will also be discussed

| Day | Main Course Topics |
|-------------|--|
| Day1 | <ul style="list-style-type: none">• Simulation concepts.• Getting started with Plant Simulation.• Plant Simulation graphical user interface.• Ribbon and Quick Access Bar customization.• Overview of the factory simulation.• Basics of Navigating Scenes.• Object selection and hierarchical navigation in 3D.• 3D window structure.• Change of object and scene display• Plant Simulation 3D highlights.• Definition of 3D parameters and inheritance.• Introduction to modeling.• Create a simple simulation.• Basics of 3D modeling.• Rotate and move 3D objects.• Start a 3D simulation• Display of states in the 3D window in color or LED• Block and starve serial lines• Access to help• Basic objects• Introduction to material flow objects• Common properties of material flow objects• Default connection behavior• Default policy for moving a MU from one station to another• Introduction to the bottleneck analyzer |

| | |
|-------------|---|
| Day2 | <ul style="list-style-type: none"> • Statistics and graphs • More chart creation techniques (optional) • Hierarchy and interfaces • Test components • Adding components to a model • Other selected topics • Introduction of classes, instances and inheritance • More information on classes, instances and inheritance • Failures of the modeling machine • Buffers and other material flow objects with a capacity greater than one • Creation of objects oriented in length (extrusion) • Modification of length-oriented 3D objects (extrusion) • Using length-oriented objects in our installation model • Loading and unloading of carriers on tracks • Use Experiment Manager to optimize a line • Installation time, assembly and disassembly of objects |
| Day3 | <ul style="list-style-type: none"> • Displaying object attributes • Attribute Explorer • Manage and search for objects • User-defined data types and attributes • Working with TableFiles • Production hours • Event debugger • Work schedule • Worker Basics • Resource change footpaths and schedules • Workers carrying coins • Using dashboards • Do more with workers • Use of workers to repair breakdowns • Adding workers to our factory • Record the time that coins enter a station • Adding a second Sankey object • Perform an energy consumption analysis |

| | |
|-------------|---|
| | <ul style="list-style-type: none"> • Print the scene • Creation of scene videos |
| Day4 | <ul style="list-style-type: none"> • Loading a CAD model in the background • Hidden objects and object backgrounds • Techniques for creating 3D frame backgrounds • Preview the purpose of the experience manager • Presentation of results in custom reports • Putting it all together • Insertion of custom logic • The syntax for writing a method • Using the method debugger • More details on the syntax of the method • Anonymous names, identifiers, paths and identifiers • Call planning method • Entry and exit controls • Write statements to assign values • Write conditional statements • 3D object attributes • Defining the 3D properties of a frame with a method • Creation and access to graphics with methods • Even more on 3D objects and methods |
| Day5 | <ul style="list-style-type: none"> • Access tables and global variables with methods • Using distribution functions in methods • Data type conversion operations • Data type conversion • Programming loops • Application of "waituntil" and "stopuntil" conditional suspensions • Access to attributes of assembly objects • Access the content of an object with a method • Create an assembly cycle • Control of methods for calling executives • Transport systems modeling |

| | |
|--|---|
| | <ul style="list-style-type: none"> • Preparations and maintenance • Use of the integrated graphic method • Methods of collecting statistical values • Purpose of the event controller • Save a plant simulation table as a text file • Loading a text file into a Plant Simulation table • Bring it all together |
| | |
| | |

Advanced : Plant Simulation Advanced Modeling and Optimization

Description:

The **Plant Simulation Advanced Modeling and Optimization** course introduces a Plant Simulation professional user to advanced methods of building simulation models, including building simulation applications, using Plant Simulation optimization tools, and improving the performance of existing simulation models.

Course topics (4 days)

- Advanced Transportation Techniques (Automatic Routing, Tugger Trains, Cranes, Stores, etc.)
- Other Advanced Modeling Techniques (i.e. Attribute Explorer, Profiler, Observers, etc.)
- Model Optimization Techniques and Random Numbers (Distributions, Data Fit Tools, Confidence Intervals, Sequential Sampler, Variants Generator, Custom States, etc.)
- Experiment Manager (Multi-Level, Random, Two-Level, Rules Setup, etc.)
- Analysis of Variance, Variance Reduction, Neural Networks, Distributed Simulation, Fuzzy Logic
- Genetic Algorithms (optimization with Stochastic simulation, sequential optimization, combined optimization, batch)
- Scheduling and Layout optimization, etc.
- Customized user dialogs
- Custom libraries