

## ADVENT2 LABS CONSULTATION PTE LTD

### **Course Outline of FlexSim Modeling Training Course 2**

Module code:	FlexSim Course 2_01 / FENT02_01
Module name:	Advanced Processflow Training
Pre-requisite module:	FlexSim Processflow Basic Training
Duration / Time:	3 Days / Tentative 9 am to 5 pm (7 hours)

#### **Training outline:**

The purpose of this module is to help participants to understand Processflow in greater depth. The training will expand from the Processflow basic training to cover other activities in the various group such as Basic, Coordination and Pre-emption. The participants will deepen their understanding of shared resources such as List and Zone. Lastly, the participants will integrate their learning in a warehouse model.

#### **Training content:**

- Recap on Process Flow
- Tracking resources and jobs using List
- Applying constraints and collecting information using Zone
- Dealing with information through Array and SQL
- Pulling from List Query
- Application: Warehouse modelling

## ADVENT2 LABS CONSULTATION PTE LTD

### Course Outline of FlexSim Modeling Training Course 2

Module code:	<b>FlexSim</b> Course 2_02/ FENT02_02
Module name:	Programming in <b>FlexScript</b>
Pre-requisite module:	FlexSim 3D Modeling Basic Training
Duration / Time:	1 Day / Tentative 9 am to 4pm (6 hours)

#### Training outline:

The purpose of this module is to introduce the participants to some coding features available in FlexSim, additional information on labels, label tables and data bundles and the 4 sets of programming statements commonly used in **FlexSim**.

#### Training content:

- Basic programming rules in writing FlexScript
- Four logic statements
  - “If .. else ..” Statement
  - “Switch” statement
  - “While” loop statement
  - “For” loop statement
- Use of Processflow to perform logic statement
- Understanding Label, Label table and data bundle
- **FlexSim** Model Tool
  - User event
  - User Command
  - Global variables
  - Global Macro

## ADVENT2 LABS CONSULTATION PTE LTD

### Course Outline of FlexSim Modeling Training Course 2

Module code:	<b>FlexSim</b> Course 2_03 / FENT02_03
Module name:	Animation and Kinematics in <b>FlexSim</b>
Pre-requisite module:	FlexSim Processflow Basic Training
Duration / Time:	1 Day / Tentative 9.00 am to 4.00 pm (6 hours)

#### Training outline:

The series aims to equip the participants with the know-how to create animation using the Animation Creator and to create kinematic logic for the object within **FlexSim**.

- Animation in **FlexSim** is the movement of the object or part within the model. The purpose is to better visualise and understand the model for the stakeholder.
- Many of the 3D objects in **FlexSim** Library come with pre-defined animations. While those animations are generally enough to meet the requirement, you can also create your own animations for your custom objects with the Animation Creator or kinematics such as turning off a work holder, opening and closing a door, etc.
- Animation creation in **FlexSim** is a feature in which one can create the movement of the shape by defining the location and time lapsed. This is done with the use of an interface and by dragging the shape.
- Kinematics is another approach to creating an animation of an object. Kinematics is a code-based approach to creating logic. With the use of the code, more exact information can be input into the system for more accurate animation.

#### Training content:

- Concept of animation creation in **FlexSim**
- Creation of component and the concept of drawing surrogate
- Hide and unhide shapes
- Use animation variables to change the animation
- Concept of Kinematics in **FlexSim**
- Kinematics functions
- Use a shape frame to change the visualization of the shape
- Use Processflow to control the kinematics

## ADVENT2 LABS CONSULTATION PTE LTD

### Course Outline of FlexSim Modeling Training Course 2

Module code:	FlexSim Course 2_04/ FENT02_04
Module name:	Data Collection and Analysis in FlexSim
Pre-requisite module:	FlexSim 3D Basic Training or Processflow Basic Training
Duration / Time:	1 Day / Tentative 9 am to 4.00 pm (6 hours)

#### Training outline:

The purpose of this module is to enable participants to use **FlexSim's** powerful Statistics Collector and Calculated Table. This can be done through effective configuration of the model in order to collect the type of statistics required. In addition, the participants will be exposed to the use of Experiments and OptQuest modules for data analysis and optimisation.

- Data collection and analysis are the most important part of simulation and modelling. **FlexSim** has a powerful Statistics Collector for the user to capture the result from the simulation. Besides the templates and standard charts provided, the participants will be trained in the way to configure customised charts for the data required.
- Experiments is a tool for modellers to analyse the impact of input parameters. By changing these parameters, one can see how results vary accordingly. This arrangement allows one to decide a probable input value to best meet the desired result.
- In addition to Experiment, **FlexSim** has an add-on optimisation tool - OptQuest. OptQuest is developed by OpTrek Inc. The purpose of optimisation is to search for the set(s) of input parameters that meet the objective of the optimisation such as maximizing or minimizing of a certain result within some constraint.

#### Training content:

- Data presentation using the dashboard and standard charts/template charts
- The working mechanism of Statistic Collector and Calculated Table
- Customisation of Standard Charts
- Custom data collection with Statistics Collector and Calculated Tables
  - Custom charts
  - Chart Tracked Variable
  - Use SQL for Calculated Table
  - Import/Export to external database
- Experimenter
  - Configuration of Experimenter
  - View result and generate report
- OptQuest
  - Configuration of OptQuest
  - View result