Metris
ANDRITZ Digital Solutions

IDEAS™ SOFTWARE TRAINING COURSE OPTIONS

ANDRITZ
ENGINEERED SUCCESS

SUMMARY

03 IDEAS Training Options

04 Training Agenda

- IDEAS Bronze (Steady-State) Training
- IDEAS Silver (Semi-Dynamic) Training
- IDEAS Gold (Dynamic) Training

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- IDEAS Mineral Processing Library Training
- IDEAS Pulp Mill Library Training
- IDEAS Power Library Training

06

- IDEAS Advanced Training
- IDEAS Developer's Kit Training

07 IDEAS Custom Training

IDEAS TRAINING OPTIONS (8 HOURS = 1 DAY)

1. 8-hour training for IDEAS Bronze (Steady-State)
2. 16-hour training for IDEAS Silver (Semi-Dynamic)
3. 24-hour training for IDEAS Gold (Dynamic)
4. 8-hour training for Mineral Processing Library
(to be combined with either of options 1-3 above)
5. 8-hour training for Pulp Mill Library
(to be combined with either of options 1-3 above)
6. 8-hour training for Power Library
(to be combined with either of options 1-3 above)
7. 16-hour Advanced Training (Recommended for advanced IDEAS user who have already been through IDEAS Gold training)
8. 5-day training for IDEAS Developer's Kit
(to develop custom plug and play objects within IDEAS)
9. Custom Training: The length of the class can be determined after consultation with the customer

TRAINING AGENDA

IDEAS BRONZE (STEADY-STATE) TRAINING

INTRODUCTION TO IDEAS MODELING

- General review of the IDEAS application and steady-state libraries.

STEADY-STATE MODELING (IDEAS BRONZE)

- Steady-state modeling techniques. Create a model template.
- Use a model to build a steady-state process model.
- Modify an existing process model by adding more process objects.
- Add heat transfer elements and phase change phenomena.

IDEAS SILVER (SEMI-DYNAMIC) TRAINING

IN ADDITION TO ALL TOPICS IN IDEAS BRONZE TRAINING THESE ADDITIONAL TOPICS WILL ALSO BE DISCUSSED:

Hybrid-Level Modeling (IDEAS Silver)

- Transform the steady-state model into a partially dynamic model.
- Add incompressible tank and PID controllers.
- Investigate process disturbances and controller tuning for a hybrid model.

IDEAS GOLD (DYNAMIC) TRAINING

IN ADDITION TO ALL TOPICS IN IDEAS SILVER TRAINING THESE ADDITIONAL TOPICS WILL BE DISCUSSED

Fully Dynamic Modeling (IDEAS Gold)

- Discover the functionality of pressure flow networks for simultaneous solution of incompressible and compressible fluid process systems.
- Present the line sizing procedure, automatic valve and pump sizing procedures.
- Build a fully dynamic model of a simple tank process using IDEAS Gold objects, including PID controllers, control valves, and pumps for a pressure flow network.
- Investigate disturbances and controller tuning for a fully dynamic system.

TRAINING AGENDA

IDEAS MINERAL PROCESSING LIBRARY TRAINING

Objects in the Mineral Processing Library will be introduced and discussed. The trainees will build a steady-state simulation of a High Pressure Acid Leach (HPAL) system. Users will get further experience on the following topics:

- Experience using the Reactor RX object.
- Supervisor convergence issues.

IDEAS PULP MILL LIBRARY TRAINING

Objects in the Pulp Mill Library will be introduced and discussed. The trainees will build a steady-state simulation of a pulping area using the objects from this library.

IDEAS POWER LIBRARY TRAINING

Objects in the Power Library will be introduced and discussed. The trainees will build a steady-state simulation involving boilers, steam network, and turbines using the objects from this library.

TRAINING AGENDA

IDEAS ADVANCED TRAINING

THIS TRAINING REQUIRES THE TRAINEE TO HAVE ATTENDED THE IDEAS GOLD TRAINING. THE TRAINEE WILL BE INTRODUCED TO ADVANCED TOPICS SUCH AS:

IDEAS Pressure-Flow Network Training

- Theory of sequential solver.
- Theory of matrix solver.
- What is inertia? When should it be used?
- Tackling Pressure-Flow convergence Issues.

IDEAS Scan Class Training

- Modification of Scan Class to make worksheets converge and run faster.

IDEAS Special Tools Training

- TWorksheet Inspector- using worksheet inspector for debugging IDEAS models.
- Dynamic Data Exchange, Stream Exporter, Scenario Importer, etc.
- Miscellaneous modeling tips.

IDEAS DEVELOPER'S KIT TRAINING

TRAINEES WILL LEARN HOW TO USE THE IDEAS OBJECT TEMPLATES TO DEVELOP SCALAR, BOUNDARY, AND PRESSURE-FLOW OBJECTS WHICH INTERACT WITH OTHER IDEAS OBJECTS ON A WORKSHEET.

DAY 1

- Overview of IDEAS Development Platform.
- Lab 1: Block Development in ExtendSim.
- Review the IDEAS Basic Object Template.
- Lab 2: Develop a Quadratic Equation Solver Object with Scalar Connectors.
- Snapshot: Set up snapshot feature, retrieve snapshot.
- Lab 3: Modify an existing Scalar Object.

DAY 2

- Review the IDEAS Boundary Object Template
- Lab 4: Modify the existing "Tank Open" Boundary Object.

DAY 3

- Overview of the Pressure-Flow Developer's Kit.
- Lab 5: Re-compile an existing Pressure-Flow object in VS C++.
- Study the Pressure-Flow Tutorial Examples. Learn to use the Pressure Flow data base.
- Learn the Solver requirements.

DAY 4 - 5

- Lab 6: Create a pipe which uses the flow equation Flow = K * A* (DP)0.5.

TRAINING AGENDA

IDEAS CUSTOM TRAINING

Our training team can create a training class based on customer's modeling needs. This option is ideal for customers who belong to industry verticals outside of Mining and Pulp & Paper who want training examples related to their particular industry.

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WHY WORK WITH ANDRITZ

For over 30 years, we've been providing services - for life-cycle modeling - Feasibility, Basic Engineering, Sizing, Design Validation, HAZOP, Operator Training, Digital Twin, etc. - to customers across different industry verticals. IDEAS Software could connect with any third-party DCS vendor to enable our customers to achieve their operator training objectives. We have a highly qualified software development team that also provides technical support 24/7, thanks to our global presence.

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