**Chemical Process Calculations, Simulation & Optimization Using UNISIM Software**

**Course Objectives:**

* Apply the Thermodynamic property packages, components & reaction types

in Process Calculations

* Develop knowledge in utilizing Building Tools such as PFD & Workbook in installing

streams, Unit Operations, Reactors and Columns.

* Use Spreadsheet in Data Entry, Calculations, Import and Export of stream conditions in the interphase between Spreadsheet and PFD.
* Perform Mass and Energy Balance Calculations for non-Reactive and Reactive systems and Size the Unit Operations and Columns
* Create DATABOOK to record different sets of process results due to changes in certain conditions in the Main Case
* Utilize the Logical operations, namely, Set, Balance and Adjust Tools to check the parameters that specify the quality and quantity of certain products for separation, Transportation and Storage
* Apply the dynamic features such as pressure-flow, Temperature-Heat flow relations by installing valves, heaters to the Main Simulation case.
* Add Process Controllers – Level, Temperature, Pressure and Flow – to check the Process Stability in Unit Operations and Columns.
* Utilize Optimizer tool for Optimization of parameters in Unit operations, Reactors and columns for achieving the objectives.

**Course Outlines:**

* UNISIM-Basic Environments & Building Tools, Process Calculations using Material & Energy Streams and utilization of spreadsheet, Data book & other logical operators in the Simulation interphase; Steady state process simulation and utilization of Dynamic features for Performance monitoring & Process controllers for checking stability; Appropriate sizing of unit operations, reactors & columns for process requirements; Utilization of Optimizer for Process Optimization.

**Who Should Attend?**

* The managers, engineers, supervisor’s technicians, & operators from Chemical & Petrochemical plants or its associated industry could attend this course.

**Duration:** 5 Days

**For more information:**

Industrial Relations- Special Programs Unit:

Tel.: +966 (013) 340-2011 / (013) 340-2140

Fax : +966 (013) 340-2060

Email: [specialprograms@jic.edu.sa](mailto:specialprograms@jic.edu.sa)