Course Title: Spreadsheet Problem-Solving for Chemical Engineers

Course ID: ELS101  
Course Type: eLearning Course

http://www.aiche.org/els101

Course Outline

Unit One: Excel Setup and Basic Skills
- Lecture One: Preview of the Course
- Lecture Two: Entry and Formatting of Data and Information
- Lecture Three: Selection, Copying and Moving Efficiently
- Lecture Four: Cell Addressing and Names
- Lecture Five: Creating Excel Formulas with Built-in Functions
- Unit One Quiz: 16 Questions

Unit Two – Working with Tables of Data
- Lecture One: Tables and Lists
- Lecture Two: Lookup Functions
- Lecture Three: Case Studies with the TABLE Function
- Lecture Four: Array Formulas and Functions
- Lecture Five: Pivot Tables and Scenarios
- Unit Two Quiz: 15 Questions

Unit Three – Process Calculations
- Lecture One: Material Flowsheeting
- Lecture Two: Closing recycles with the Iterative Solver
- Lecture Three: Property Estimation and Equations of State
- Lecture Four: Solving Differential Balances
- Lecture Five: Cost Estimation and Cash Flow Analysis
- Unit Three Quiz: 10 Questions
Unit Four – Applied Statistics
  • Lecture One: Characterizing Data Sets
  • Lecture Two: Creating Excel Graphs
  • Lecture Three: Regression Analysis
  • Lecture Four: Design of Experiments
  • Lecture Five: Statistical Quality Control
  • Unit Four Quiz: 12 Questions

Unit Five – Solving Equations
  • Lecture One: Algebraic Equations and Equation Sets
  • Lecture Two: Differential Equations
  • Lecture Three: Use of Solver and Goal Seek
  • Lecture Four: Unit Operation Modeling
  • Lecture Five: Process Control Calculations
  • Unit Five Quiz: 12 Questions