

Course Title: Spreadsheet Problem-Solving for Chemical Engineers

Course ID:	Course Type:
ELS101	eLearning Course
http://www.aiche.org/els101	

Course Outline

Unit One: Excel Setup and Basic Skills

- Lecture One: Setting up Excel
- Lecture Two: Entry and Formatting of Data
- 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