Course Title: Chemical Engineering for Non-Chemical Engineers

Course ID: ELA110  
Course Type: eLearning Course

http://www.aiche.org/ela110

Course Outline

Unit One
- Lecture One: Chemical Engineering for Non-Chemical Engineers
- Lecture Two: Safety in Chemical Engineering
- Lecture Three: Basic Toxicology
- Lecture Four: Economic analysis
- Lecture Five: The Unit Operation Concept

Unit Two
- Lecture One: Stoichiometry and Reactions
- Lecture Two: Mass balances and Process Flow Sheets
- Lecture Three: Gas laws and EOS
- Lecture Four: Reaction Engineering, Thermodynamics and Kinetics
- Lecture Five: Concepts and Principles for Reactive Chemicals

Unit Three
- Lecture One: Flow of Fluids, Heat Transfer, and Evaporation
- Lecture Two: Pumps, Meters, and More
- Lecture Three: Heat Transfer and Heat Exchangers
- Lecture Four: Radiative Heat Transfer and More

Unit Four
- Lecture One: Mass Transfer Fundamentals, Distillation and more
- Lecture Two: Absorption and Stripping
- Lecture Three: Solvent Extraction, Adsorption, Ion Exchange, and Membranes
- Lecture Four: Cooling Towers, Humidification, and Dehumidification
Unit Five

- **Lecture One**: Liquid-Solids Separations, Solids Handling and Crystallization
- **Lecture Two**: Filtration
- **Lecture Three**: Drying of Solids
- **Lecture Four**: Solids Handling

Unit Six

- **Lecture One**: Process Control
- **Lecture Two**: Tanks and Process Vessels
- **Lecture Three**: Chemical Engineering IN Polymers

**Final Exam**: 30 Questions