Course Title: Chemical Engineering for Non-Chemical Engineers

Course ID:	Course Type:
ELA110	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