



**Course Title:** CCPS' What Every New Engineer Needs to Know about Process Safety

Course ID:	Course Type:
CCPS' What Every New Engineer Needs to Know about Process Safety	eLearning Course
<a href="http://www.aiche.org/ela154">http://www.aiche.org/ela154</a>	

### Course Outline

#### Process Safety Module 1

- Course Objectives
  - Describe key elements of process safety
  - Identify and apply key concepts and terminology to process safety
  - Locate other resources to further process safety education
- What is Process Safety?
- Why is it important?
  - Ethics
  - Regulations
  - Economics
- Basic Terminology
  - Hazard
  - Loss of Containment
  - Vulnerability
  - Consequence
  - Frequency
  - Risk
  - Mitigation
  - Risk Tolerance
  - ALARP (As Low As Reasonably Practicable)
  - RAGAGEP (Recognized and Generally Accepted Good Engineering Practices)

- Process Safety Module 2
- Objectives
  - Describe means of identifying hazards
  - Identify means of modeling hazards and risks
- Introduction
  - How to determine what hazards are present and what to do with them?
- Hazard identification
  - Known vs. Unknown Hazards
  - Sources of hazard information:
  - Hazard analysis studies
  - Leading and lagging indicators
  - Incident Pyramid
- Hazard Modeling
  - Loss of containment
  - Toxic Dosage
  - Fires
  - Vapor cloud explosion
  - Other Explosions and concerns
- Risk Modeling
  - Consequence modeling
  - Frequency modeling
  - Risk modeling
  - Cost benefit analysis
- Mitigation
- Definitions

## Process Safety Module 3

1. Objectives
  - a. Describe methods for reducing likelihood of loss of containment
  - b. Discuss different management techniques to reduce risk
2. Introduction
3. Inherently Safer Design
4. Mechanical Integrity
5. Training
6. Emergency Response Planning
7. Culture
8. Definitions