Chemical Engineering

Advanced Safety and Loss Prevention (CENG0020)

Description

Aims:
To provide students with advanced training in hazard identification, quantification and mitigation as well as risk management.

Learning Outcomes:
On completion students should:
- be able to fully appreciate the importance of Safety and Loss Prevention in the process industries;
- be able to identify, quantify and manage hazards in terms of their potential to cause damage to the environment, the workforce and the general population outside the perimeter fence;
- be able to apply their knowledge during conceptual design, operation and decommissioning of process plant

Synopsis:
- The application of safety as an inherent part of process plant design will be dealt with and procedures for its implementation are discussed.
- Incidents which have been significant in achieving changes in culture will be highlighted.
- Formal present-day requirements of engineering for safety, including the methodology for establishing necessary criteria, implementation and monitoring, verification and validation of safety systems, and responsibility for auditing.
- Basic procedures for Hazard Identification and Development (HAZID), Hazard and Operability Studies (HAZOP) and Quantitative Risk Assessment (QRA). Safety Studies, Safety Cases and their development, Safety Management Systems and the role of the Health and Safety Executive.
- Key consequences arising from gas accumulation and dispersion, explosion, escalation and smoke,
area classification and transportation.
The Masters level (level 7) version of the module (CENG0020) has a stronger focus on unseen, and more open ended, problem solving.
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