

The background features a blurred image of several people in a meeting or workshop setting, overlaid on a large diagonal graphic that splits the page into orange and teal sections.

# SPECIALISED COURSE PROCESS SAFETY ENGINEERING

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**17 - 20 March 2025**  
LEUVEN | FACULTY CLUB



## DEAR MEMBER,

essenscia herewith presents the details of the Specialized Course on Process Safety Engineering organized as part of the Process Safety Academy.

For additional information concerning these topics, please contact **Mr. Geert Boogaerts** (+32 476 906 663 | [gboogaerts@essenscia.be](mailto:gboogaerts@essenscia.be)). To register, please [click here](#).

The level and quality of process safety management determines the success of an organization. This course offers the essentials of process safety engineering.

### Attendees

Professional engineers with industry experience for whom understanding and applying process safety thinking is an integral part of their jobs and who would benefit from an engineering view on process safety for deepening the expertise in their roles and for their career development (e.g. operations, engineering, maintenance, inspection, safety professionals...).



*This course is included in the Master of Safety Engineering at KU Leuven and has a year-on-year evaluation of 4,8/5.*

### Aim

Process safety is a specific discipline within the organization of a company. The level and quality of process safety management determines the success of the organization.

Process Safety Engineering plays an important part during the lifecycle of a process plant. Not only are important preventive and mitigating measures defined during the project phase, changes are also introduced during operations; near misses and incidents will occur. This all requires a fundamental knowledge of process safety concepts.

With this 4-day Specialized Course on Process Safety Engineering, essenscia's Process Safety Academy aims to provide professionals with the essentials of process safety in unit operations. The lectures are taught by specialists in their discipline. For each day, a syllabus is provided by the organization. A certificate will be granted at completion of the course. Additionally, a text book "Guidelines for Engineering Design for Process Safety" is provided to participants.

### Programme

The lectures are built around some generic important process units within the chemical industry: batch and continuous reactors, distillation columns and storage tanks. Both will be presented in a generic way to indicate specific process safety engineering features.

In-depth incident analysis with an engineering root cause or as solution are presented during the first day together with the concept and the proofed added value of intrinsic safe design.

During the second day, a theoretical course on calculating relief valves is taught, followed by a practical workshop.

The third day is built up around the set-up and interpretation of the instrumentational protection devices (IEC 65111). The instrumentational protection guidelines are discussed and interpreted from a theoretical, practical and organisation level supported by evidence based examples, interpretation and applications.

The fourth day is focussing around a key operation for every chemical company, namely storage of chemicals from an engineering point of view. A plant visit to a life installation brings the theory into practice.

# STAKEHOLDERS

## Lecturers

- ✓ **MSc. Eric Dom**,  
Process Safety Consultant, Nero
- ✓ **MSc. Nico Hertoghe**,  
Core Safety Engineering, ExxonMobil
- ✓ **PhD. MSc. Denis Mignon**,  
Polymers Process Specialist Total,  
Visiting Professor UCL
- ✓ **MSc. Geert Verduyck**,  
Process Safety expert BASF,  
Visiting Professor KU Leuven and  
Ghent University

## Governance Board

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Jnj Innovative Medicines
- ✓ **MSc. Frank Quaeys**, Head of  
Technical Services, Covestro
- ✓ **MSc. Geert Verduyck**, Director Large  
Capital Projects, BASF Antwerp
- ✓ **MSc. Jan Weckx**, Process Safety Lead, Bayer  
Crop Science Antwerp
- ✓ **MSc. Johan Spruytte**, SHEQ Manager, Evonik  
Antwerp
- ✓ **MSc. Koen Colpaert**, Group Process Safety  
Manager, Borealis
- ✓ **MSc. Koen Gerard**, Covestro
- ✓ **MSc. Koen Verlact**, HSSE Manager, Ineos  
Manufacturing Belgium
- ✓ **MSc. Kris Deboutte**, Global SHE Manager,  
Ineos
- ✓ **MSc. Kris Ghoos**, Safety & Health Manager,  
Tessenderlo Kerley International
- ✓ **MSc. Nicolas Hertoghe**, Process Safety  
Engineer, ExxonMobil Research & Engineering
- ✓ **MSc. Peter Jacobs**, Site Safety Manager,  
Ajinomoto Omnicem
- ✓ **Phd. MSc. Pol Hoorelbeke**, VP Major Risks  
Division, TotalEnergies

### HOST CITY

Leuven

### LOCATION

Faculty Club  
Groot Begijnhof 14  
[www.facultyclub.be](http://www.facultyclub.be)

### LUNCH

3-course business menu

### TOTAL REGISTRATION FEE

member: € 2200  
non-member: € 2700

### REGISTRATION LINK

[please click here](#)



DAY TO DAY OVERVIEW OF THE PROGRAMME :

08:30 – 17:30

DAY 01



MONDAY 17 MARCH 2025

## Chemical Reactors

Welcome speech

**Geert Boogaerts**, Senior Advisor Process Safety, essenscia

Why to start with engineering ?



Introduction to process safety design

**Geert Vercruysse**, Process Safety expert BASF, Visiting Professor KU Leuven and Ghent University

Lessons learned from incidents – The build-up of a process safety concept



Inherent safe design &amp; case studies

**Nico Hertoghe**, Core Safety Engineering, ExxonMobil

Incorporation of intrinsic safe elements in design engineering

DAY 02



TUESDAY 18 MARCH 2025

## Mechanical safeguarding

Scenario selection and boundary conditions – A distillation column as an example

**Geert Vercruysse**, Process Safety expert BASF, Visiting Professor KU Leuven and Ghent University

A common and broad unit operation – safety engineering



Detailed design of a relief valve (API 521)

**Denis Mignon**, Polymers Process Specialist Total, Visiting Professor UCL

Towards a correct calculation. Every scenario included ?



Case studies: workshop calculation of relief valves

**Sadat Homayouni**, Shirin & Gaëlla Delcour, Experts, Sweco

Can we calculate everything?

DAY 03



WEDNESDAY 19 MARCH 2025

## E & I in Process Safety Engineering

From alarm towards controller and/or interlock

**Geert Vercruysse**, Process Safety expert BASF, Visiting Professor KU Leuven and Ghent University

Including learning from incidents



Detailed design of an instrumentational interlock (IEC65111)

**Erik Dom**, Process Safety Consultant, Nero

Inspired by the process risks ?



An operational point of view Case studies: workshop calculation of instrumentational interlocks

**Erik Dom**, Process Safety Consultant, Nero

How to attach theory towards the real life ?

DAY 04



THURSDAY 20 MARCH 2025

## Storage tank

Process safety aspects around storage **Geert Vercruysse**, Process Safety expert BASF, Visiting

Professor KU Leuven and Ghent University

A simple operation ?



Site visit at ITC Rubis Terminal Antwerp

**Pascal De Maeijer**, CEO, ITC Rubis Terminal Antwerp

A real life visualization