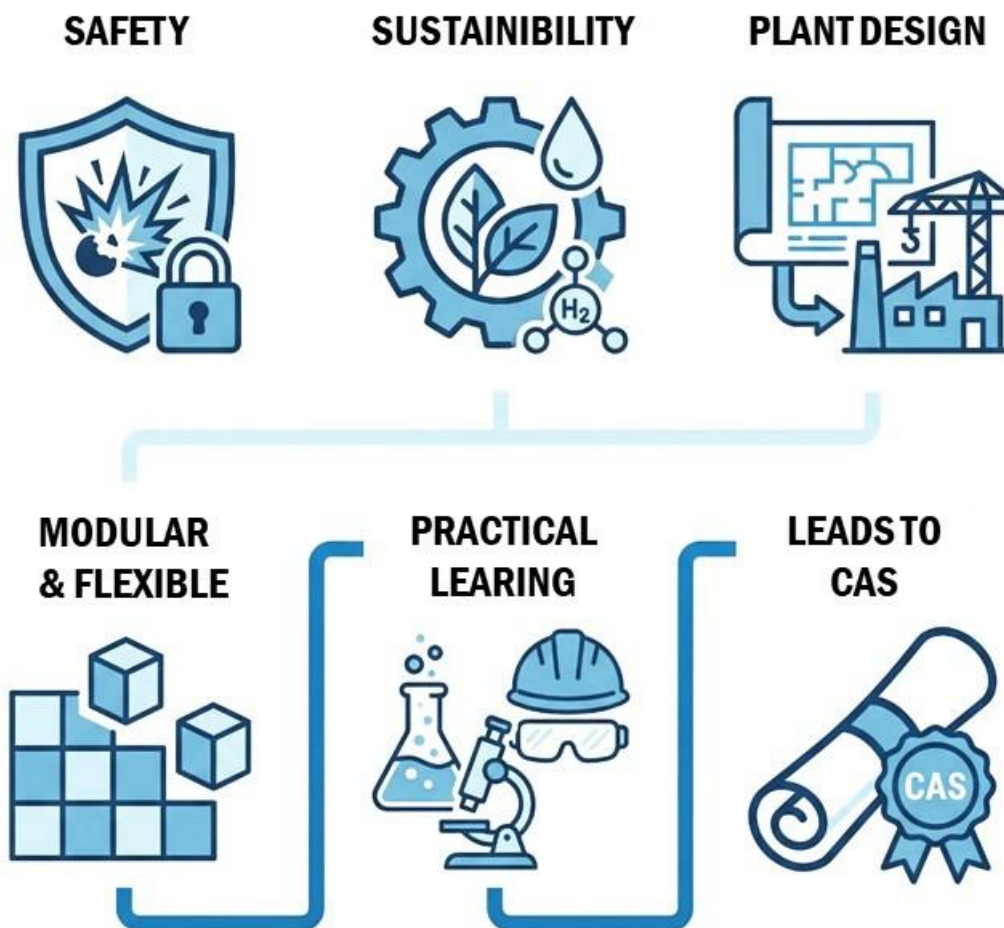


Process Engineering Supplementary Course

extendible to a
CAS Process Engineering



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The course offers a unique opportunity to deepen your knowledge in the field of **process engineering**. The focus is on the topics of **safety**, **sustainability** and **plant design**.

The eleven modules take place every **two years** and can also be selected individually. At the same time, the course also offers an insight into the latest state of applied research in the field of process engineering.

After completing seven modules, you can register for the performance assessments and the final thesis to obtain a **CAS in Process Engineering**.

Module 6 Energy efficiency

27/28. August 2026

HSLU
Horw

- **Energy efficiency** in industry: roadmaps to decarbonization and implementation support. ([S. Flück Flimatec AG & HSLU](#))
- Basics in **Pinch Analysis** including a case study (PinCH software). ([D. Olsen, HSLU](#))
- **High-temperature heat pumps** (incl. steam generation). ([Dr. C. Arpagaus, OST](#))
- Industrial **Evaporation & Crystallization**: Possibilities for energy saving through vapor recompression and alternatives. (Ch. Weber, [Veolia Watertech](#))
- **Visit to the Pilot Plant** for Thermal Energy Systems. Focus: Pinch lab.

Module 7 Control of processes

20/21. August 2026

CTE
Liest

- Device technology, control loop, signal flow, controller, transmission behavior, stability criteria. ([P. Bürgin CTE](#))

Module 8 Carbon Capture - Storage and Utilization

KW38 or 39 2026

EAST
Rapperswil

- Carbon Capture (CC) - Storage and Utilization: A Technology Overview
Including a visit to a [Plasma Plant](#) ([Prof. Dr. A. Heel, UMTEC-OST](#))
- Various speakers from industry, politics and research will give an insight into concrete carbon capture projects in Switzerland and worldwide. Furthermore, the political framework in Switzerland is examined.

Module 9 Plant engineering: From the P&ID to passivation

03/04. September 2026

INRA Group
GETEC.
PARK.
SWISS
Pratteln/
Muttenz

- Introduction to corrosion of stainless-steel equipment ([M. Vernier Borer Chemie AG](#))
- **Cleaning and passivation** in practice. ([E. Gubler, AZI Services AG](#))
- From the **P&ID** to the **isometry**. Afterwards **visit of the workshop** of the Inra Group in Pratteln. ([T. Knebel, Inra Group](#))
- Introduction to **project management** in plant engineering. ([L. Bertonazzi, Actemium SI-TEC GmbH](#))

On the basis of a plant **on the GETEC site** the different steps of planning and implementation of a plant engineering project will be explained: From block flow diagrams and dimensioning to qualification. ([Referee GETEC. PARK. Swiss L. Bertonazzi](#))

Module 10 Safety aspects in plant design

10/11. September 2026

FHNW
Muttenz

- Explosion protection for a hydrogenation reactor in a mini plant: Elaboration of an **Explosion Protection Document**. ([A. Wildhaber, Basler & Hofmann AG](#))
- **Constructional explosion protection** ([T. Borer, André Ramseyer AG](#))
Design of a **Batch Hydrogenation** and safety assessment (HAZOP scenarios) ([P. Vrijkorte V. Dienstleistungen GmbH](#))
- **Visit of [Hydrogenation autoclaves](#)** in the process technology center.

Module 11 Scale-Up in Crystallization, Filtration and Drying

13/14. August 2026

HEIA-FR
Fribourg

- Crystallization and Filtration. ([Prof. Dr. T. Vetter, FHNW](#))
- Drying: Introduction in the **simulation of dryers using Dynochem**.
Visit of [The Pilot plant](#) ([Prof. Dr. L. Gremaud](#))

Module 1 Reaction Technology, Process Safety, Electrostatics

Thu/Fri CW33 2027

FHNW
Muttenz

- Practical scale-down of stirred reactors
Including **demonstration of the [Scale-Down Reactor](#)** in the process technology center and simulation examples with **Matlab Simulink** and **Matlab Simscape**. [\(Prof. Dr. A. Zogg\)](#)
- **Laboratory:** Decomposition kinetics based on DSC measurement [\(K. Wegmann, Roche\)](#)
- Criticality of a chemical reaction (calculations with **Excel & Matlab**) [\(Prof. Dr. A. Zogg\)](#)
- Electrostatics based on case studies. [\(Dr. K. Schwenzfeuer, ELAN Personal AG\)](#)

Module 2 Fundamentals of Process Engineering and Separation

Thu/Fri CW34 2027

HSLU
Horw

- Typical Unit Operations of separation [\(Prof. Dr. Jörg Worlitschek, HSLU\)](#)
Including **demonstration tests in the [Pilot Plant](#)**
- Basics of absorption (calculations with **Matlab** and **Chemcad**) [\(Prof. Dr. A. Zogg\)](#)
- Case study on the aqueous absorption of solvent vapors [\(J. Böisinger, ecoSign\)](#)

Module 3 Physico-chemical principles and methods

Thu/Fri CW35 2027

FHNW
Muttenz

- Applied thermodynamics with **Matlab**
Including **laboratory tour** with a focus on substance data: cp, vapor pressure, VLE. [\(Prof. Dr. A. Zogg\)](#)
- Data mining in process engineering. [\(Dr. S. Pauli, VTU\)](#)
- COSMO-RS and ms2 physical properties models. [\(Dr. A. Klein, arxada\)](#)

Module 4 The energy system and new energy carriers

Thu/Fri CW36 2027

EAST
Rapperswil

- Swiss energy system – today and tomorrow
E-fuels – international development
Hydrogen and **Power-to-X**: Technologies, application areas and projects in Switzerland. Including a tour of the [Power-to-X research platform](#)
- Introduction to the **Life Cycle Assessment** of energy carriers [D. Hengevoss, FHNW](#)
- **Compressor technology** for renewable gases such as green **Hydrogen** and **Ammonia** [Referee Burkhardt Compression](#)
- **Hydrogen supply** in Switzerland: Status, roadmap, challenges, safety aspects. [B. Hirschi, H2-HUB Switzerland](#)
- Risks in logistics and storage of **Hydrogen**

Module 5 Safety Valve and Safety Integrity Levels (SIL)

Thu/Fri CW37 2027

FHNW
Muttenz

- Design of safety valves (technical scenarios). [\(Prof. Dr. F. Stoessel, TÜV SÜD\)](#)
- Calculation examples for pressure relief (incl. chem. scenarios) [\(Prof. Dr. A. Zogg\)](#)
Including **a visit to [prototype reactors](#)** in the technical center and a simulation example with **Matlab Simulink** and **Matlab Simscape**.
- Safety Integrity Levels (SIL) Determination and Implementation
Exercise on a concrete case study: filter dryer. [\(Prof. Dr. A. Zogg\)](#)
[\(Antoine Koerckel TÜV SÜD Schweiz AG\)](#)

Course instructor and further information:



Chemical Process Development and Process Safety

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Institute of Chemistry and Bioanalytics
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<https://www.fhnw.ch/de/personen/andreas-zogg>



Time: Each module lasts two full days.

Price: per module **800 CHF** (excluding meals, incl. coffee).
The price for all 11 modules is CHF 8'000.

Module 8: The **surcharge for on-site catering** depends on the number of participants and will be invoiced separately

Number of participants: Minimum 5, maximum 10 (per module, except for module 8).

Registration deadline: One month before the start of the respective module. After the registration deadline, a final decision will be made whether the module will take place.

Target audience:

Process engineers, chemical engineers, development or production chemists and experienced laboratory or operational staff from the process industry.

Concept and learning objectives:

The course is designed to enable you to get started or refresh your knowledge of important topics in process engineering. The focus is on the topics of safety, sustainability and plant engineering. During the course, you will get to know experts in various fields for further in-depth training. Furthermore, the course should offer you the opportunity to expand your personal network in your professional environment.

Registration: Via SGVC Secretariat: sekretariat@sgvc.ch

Certificate of participation: You will receive a certificate of participation from the SGVC for each module.

CAS Process Engineering

As soon as **seven modules** have been completed, you can register for the performance assessment and the final thesis, provided the admission criteria are met.

Thesis: It makes sense to carry out the thesis directly at the workplace. For example, implementing a basic principle learned in the course in your work environment.

Price: **4,600 CHF** (performance assessment & CAS thesis).

Modules **can be credited retrospectively**. The entire CAS program (7 modules and CAS-thesis) must be completed within 3 years.

Registration: <https://www.fhnw.ch/de/weiterbildung/lifesciences/cas-verfahrenstechnik>