Modulbezeichnung:	**Process Control and Plant Safety (PCS)** (Process Control and Plant Safety)	**5 ECTS**
Modulverantwortliche/r:	Andreas Bück	
Lehrende:	Andreas Bück	

Startsemester: SS 2022	Dauer: 1 Semester	Turnus: jährlich (SS)
Präsenzzeit: 45 Std.	Eigenstudium: 105 Std.	Sprache: Englisch

Lehrveranstaltungen:

Process Control and Plant Safety (SS 2022, Vorlesung, 2 SWS, Andreas Bück)
Process Control and Plant Safety (Exercise) (SS 2022, Übung, 3 SWS, Andreas Bück)

Empfohlene Voraussetzungen:

Prerequisites: Required

- Mathematics 1 - 3, Statistics

Recommended

- Thermodynamics and Heat and Mass Transfer
- Fluid dynamics
- Chemical Reaction Engineering
- Bio Process Engineering

Inhalt:

- Basic concepts of process and plant safety
- Layer model of process and plant safety
- Reliability of processes and plants/Risk analysis
- Automation systems for process and plant safety
- Failure impact analysis
- Cyber Security in view of Internet of Things (IoT)
- Case studies from (bio-)chemical industries

Lernziele und Kompetenzen:

Students will be able identify and analyze risks in process and plant operation and be able to protect equipment, humans and environment from operational hazards. The module provides key concepts and methods to assess risks and to increase operational safety, especially by use of process automation.

Literatur:

Recommended reading:

- SFPE, NFPA, The SFPE Handbook of Fire Protection Engineering, 2008 Hauptmanns, U. (Ed.) Plant and Process Safety, in Ullmann's Encyclopedia of Industrial Chemistry, 8th edition
- Center for Chemical Process Safety (CCPS) "Guideline for Engineering Design for Process Safety" Wiley 2012

Studien-/Prüfungsleistungen:

Process Control and Safety (Prüfungsnummer: 29011)
(englische Bezeichnung: Process Control and Safety)

Prüfungsleistung, mündliche Prüfung, Dauer (in Minuten): 30 minutes
Anteil an der Berechnung der Modulnote: 100%
weitere Erläuterungen:
Grading procedure Module examination: 100%
Prüfungssprache: Englisch

Erstablegung: SS 2022, 1. Wdh.: WS 2022/2023
1. Prüfer: Andreas Bück