Title:	Safety and Systems Engineering
Short Code:	EVA_SSE
ECTS Credits:	2
UAS:	ZHAW
Organizer Details:	MRU IAMP
Evaluation:	Oral Presentation
Decision Date:	21 August 2020
Start Date:	17 September 2020
End Date:	31 December 2020
Date Details:	
Type:	Seminar / Workshop
Language(s):	English by default
Description (max. 300 characters):	As more and more mechanical systems are being replaced by electronic systems, different procedures are needed to continue to develop safe systems. In this module, students learn how to develop and asses safety-related systems using systems engineering approaches This module provides the basic knowledge for the more specialized modules.

Contents and Learning Objectives:	This course introduces the most important concepts and methods of systems engineering with a special focus on safety related systems.
	
	Contents:
	
	• complete safety life cycle
	  ○ concept
	  ○ risk analysis
	  ○ system Architecture
	  ○ requirements for system components
	  ○ implementation (HW/SW)
	  ○ verification and validation
	  ○ commissioning, operation and decommissioning
	• various aspects of system development in general and the development of safe systems in particular
	• requirements, standards, laws
	• overview on verification techniques and methods
	• development processes
	• technical solutions
	• application of what has been learned within a comprehensive case study

	Learning Objectives: • students can identify the hazards for a socio-technical system and assess the associated risk • students know the role of standards for the approval of systems and can work with them • students know the basics of systems engineering • students know the steps of the safety lifecycle, are familiar with the respective work packages, and can work on parts of them • students know different methods and techniques of verification and validation of systems and can apply them • students understand that safety is a system property that is achieved by an interdisciplinary team during the development phase based on a case study
Admission:	Electrical and Mechatronic Engineers, Computer and Data Scientists, Mechanical Engineers, Systems Engineers
Literature:	Literature list will be provided
Conditions:	50% theory / discussion, 50% labs / work in teams
Contact:	Dr. Monika Reif
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Status:	registration open
Specialization:	Aviation (Avi) Computer Science (CS) Data Science (DS) Electrical Engineering (ElE) Mechanical Engineering (ME) Mechatronics & Automation (MA) Medical Engineering (Med)