

School of Engineering

Institute of Applied
Mathematics and Physics

www.zhaw.ch/iamp/en

Seminar Information

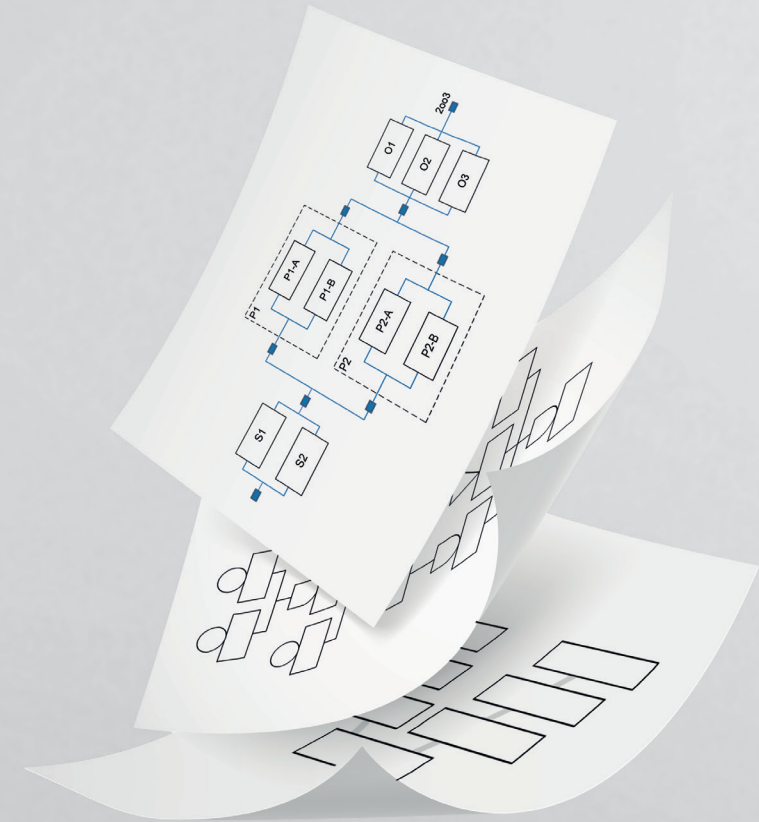
Dates	You can find the current dates on our website www.zhaw.ch/iamp/en
Venue	ZHAW School of Engineering Zurich Campus Lagerstrasse 41 8021 Zürich (Directly adjacent to the Zurich central railway station)
Fee	CHF 1'400.-
Contact and registration	Dr. Monika Reif (monika.reif@zhaw.ch) +41 58 934 47 90
Organizers	ZHAW School of Engineering IAMP in cooperation with Electrosuisse



School of Engineering

IAMP Institute of Applied
Mathematics and Physics

Seminar: Functional Safety



Seminar: Functional Safety

Electrical, electronic and programmable electronic systems that contribute to a safety-related function require compliance with an international standard for functional safety such as IEC 61508 or its sector-specific derivations, e.g. ISO 26262 or EN 62061. Anyone who is involved in the development, manufacturing, or maintenance of such systems must be familiar with the related standards and, most particularly, their requirements in order to prevent, detect and react accordingly to random and systematic failures.

This two-day seminar provides an introduction to the world of 'functional safety'. Participants will be given the fundamentals to understand the requirements for a safety-related life cycle and, above all, to be able to put them into practice.

The goal is to understand the technical principles that will be applied and gain insight into the necessary formal processes and documentation. Electrosuisse, the Swiss inspection body and implementing partner of the seminar, will explain what is required for the certification of a product and how best to structure the related technical documentation. The seminar uses IEC 61508 as a base standard for functional safety, along with additional relevant standards.

The seminar communicates the fundamental guidelines with presentations and case studies and is designed for engineers, technicians, specialists and managers from the areas of development, testing and research. There are no prerequisites for attending the seminar. Our lecturers have deep knowledge in both the theoretical aspects of functional safety as well as long-standing working experience in this field gained at large industrial firms.

The seminar is offered regularly in German language and can be offered in English on request. Please get in contact with us.

Participants of the seminar will receive a certificate.

Content

Introduction	<ul style="list-style-type: none">- Legal framework- Norms and standards- Terms and definitions- Functional safety and risk reduction- Overview of IEC61508
Safety-related Systems	<ul style="list-style-type: none">- Safety-lifecycle and V-model according to IEC 61508-1- Functional safety management- Hazard and risk assessment- Safety Integrity Level (SIL)- Safety function and architecture- Requirements management
Hardware (E/E/PE)	<ul style="list-style-type: none">- Safety-lifecycle according to IEC 61508-2- Hardware failures, cause of failures, types of failures- Hardware architecture and hardware fault tolerance (HFT)- Probability of failure (PFD/PFH)- Safe failure fraction (SFF)- Techniques and measures to prevent or detect random HW failures- Techniques and measures to prevent or detect systematic HW failures- Verification methods (FTA and FMEDA)
Software	<ul style="list-style-type: none">- Safety-lifecycle according to IEC 61508-3- Software safety requirements- Software failures- Techniques and measures to prevent or detect systematic SW failures- Requirements for the tools involved- Software verification and validation
Integration and Validation	<ul style="list-style-type: none">- Requirements for distributed functions- Requirements for communication- Integration and validation- Further steps of the safety life cycle- Certification procedure