



# FUNDAMENTALS OF SYSTEM AND PRODUCT SAFETY

## ***Course Descriptions***

This course will provide attendees with a solid foundation in the motivations for and techniques associated with, designing safer systems and products. We will review a variety of real life accidents and explore their root causes, to highlight that organisational failings, design errors and operational issues have the capacity to create catastrophic events. Within an SE approach, we'll explore methods to assess safety and human factors risks for a set of technologically diverse systems before considering how to define design requirements to control potential hazards. The course will also provide an overview of safety management systems, hazard logs, safety arguments, incident investigation, complex electronics safety (including software), CE marking and hazardous materials.

## ***Learning Outcomes***

- Gain an understanding of what "safe" means, the business and project benefits linked to robust safety management and the cost of accidents.
- For all stages of product's life-cycle, be able to outline the key elements associated with "designing for safety".
- Have an overview of the tools and techniques employed by safety

specialists when adopting a risk based approach to safety.

- Have an appreciation of the safety issues associated with software, human/system interactions, novel technologies, complex system of systems and autonomy.

### ***Who Should Attend?***

- Design engineers wishing to improve or refresh their system safety knowledge to enhance their integration within a Systems Engineering team.
- Project and programme managers wishing to understand how poor safety engineering can lead to prohibitive project risk.
- Engineering managers wishing to improve their specialist knowledge in order to gain the most from their safety team.
- Business leaders wishing to understand their legal and moral responsibilities to ensure that products and systems are designed, commissioned and operated safely.

### ***Course Rates***

Early Bird Rates: 1,350 CHF. Regular Rates: 1,500 CHF

### ***Duration***

2 days

### ***Delivered By***



Richard Maguire

Richard Maguire BEng MSc CEng FIMechE MSaRS MBCS has vast experience in safety engineering across a number of diverse

technologies including, aviation, weapons, communication systems, vehicles, unmanned air systems, sub-sea platforms and software. Notably, Richard worked on assuring flight control software for UAS, as well as post-accident and predictive stress analysis and computational fluid dynamics modelling for oil, gas and fire protection pipework systems. As a renowned specialist, he plays a key role in developing UK safety and software standards and has published a vast array of diverse papers. Additionally, he is the author of the popular book "Safety Cases and Safety Reports - Meaning, Motivation and Management". Due to his standing within the safety community, Richard has taught at a number of institutions, including the: University of York - Safety Critical Systems Master's Degree; Empire Test Pilot School - Aviation System Safety; UK Ministry of Defence - Acquisition System Safety; and the Bundeswehr University Munich - Modelling Human Reliability.



Jim Mateer

JIM MATEER BSc, MSc, MIET, MRAeS has a background in engineering within the hazardous fast jet and weapons environment. For the last twelve years, however, he has specialised in safety engineering and management in a number of diverse domains including aviation, weapons, communications, autonomy, protective clothing, hydrogen fuel cells, armoured vehicles and software. During his time with a large electronics manufacturer Jim specialised in product safety, compliance to EU legislation and CE Marking. His study at the University of York on the Critical Systems Safety Engineering course, culminated within him presenting his research into the assessment of Safety Related Information Systems. Recently Jim has provided Independent Safety Auditing services for the UK Ministry of Defence's suite of future armoured fighting vehicles and been supporting a global aviation

manufacturer improve its management of airworthiness. For QineitQ Jim developed two system safety courses dealing with safety risk identification and assessment and safety management.