2.1 Risk Management in Airline Operation (RMAO)

Module leader: Prof. Ernst Folz

ECTS points: 6 ECTS  
Workload (h): 180

Type of module and position in the course of study: Mandatory module taught in the 2. semester  
Contact hours (h): 56

Scope und frequency of teaching: 14 classes in winter term  
Self-study (h): 124

Type of module and position in other study programs or continuing education offers: -

Learning outcomes:
Upon completion of this module students will be able to ...

Knowledge and understanding (extension, consolidation and understanding of knowledge)
- Understand the concepts of risks and safety in the aviation industry
- Understand the use of stochastic methods in risk management
- Extend the understanding of impacts of cultural and social factors to the assessment of risks and accidents within the aerospace industry
- Detect conflict of goals between safety and profitability as well as between learning from mistakes and punishment

Using, applying and generating knowledge (applying and transferring knowledge, Scientific innovation)
- Apply concepts of risk management (identification, qualitative and quantitative assessment)
- Apply the mandatory rules and regulations for risk management within the aviation industry

Communication and cooperation
- Assess the identification, assessment and communication of risks with respect to the cognitive and cultural background of individuals in aviation industry
- Establish communication strategies for risks: content and mitigation actions
- Conduct aerospace related risk management in a team: detect, assess, communicate and mitigate

Reflection of academic and professional identity
- Critical assessment of possibilities and limits of risk management theories in a professional aviation related environment

Course content:
- General Principles of Risk Management: Concepts of risks and safety
- Stochastic approaches in risk management: reliability engineering, risk matrices, pros and cons of methods
- Factors for the individual perception of risks: cognitive/psychological; cultural/social
- “Human errors” in aerospace business and in everyday life
- Misinterpretation of systematic causes of accidents as human errors
- Methods for the assessment of accidents (e.g. HFCAS – Human Factors Analysis and Classification System)
- Reporting in sensitive industries: Conflict of legal sentence and quality of information
- Cognitive bias: Cognitive influences on the decision making process
- Risk management in aerospace industry: Regulations (ICAO) and best practices
- Case studies: Investigation of accidents in the aviation business and other industries
- Recent developments in risk management (e.g. systematic safety)

Language of teaching: English

Prerequisites: None

Preparation/literature:

Further info to be presented and discussed in the first session of the course

Further information:
Aulis platform to be used
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