

Course Title	Advanced Topics in Safety Management and Risk Contexts				
Course Code	OSH715				
Course Type	Compulsory				
Level	Doctorate (3rd Cycle)				
Year / Semester	1 st Year / 2 nd Semester				
Instructor's Name	TBA				
ECTS	10	Lectures / week	3 Hours/14 Weeks	Laboratories / week	NONE
Course Purpose and Objectives	<p>The objective of the course is to provide the researcher with the appropriate doctoral level background in risk contexts (assessment, management and communication) as well as safety. In addition to that, the direct link between risk and safety science, its fundamental role in establishing a safety management policy will be mastered. At the end of the course researchers should be in a position to illustrate excellent knowledge and understanding of numerical and non-numerical risk assessment techniques, to design and implement appropriate risk management measures and, finally, to be able to communicate effectively risks.</p>				
Learning Outcomes	<p>Upon successful completion of this course students should be able to:</p> <ul style="list-style-type: none"> • Draw understanding and inferences from Safety Science history • Discuss in depth safety science theories and identify their relationship with required practice • Identify and discuss the importance of safety metaphors • Based on National and EU relevant legislation, to develop health and safety policies and strategies • Identify and explore the importance of a tailor-made risk evaluation strategy in the design of an occupational health and safety plan at the organization level • Design a holistic health and safety management system, taking in account the organization's business and production processes, its employees, visitors, contractors and sub-contractors as well as others who may be affected by the organization's activities e.g. product safety/liability, safety of structures and buildings for end users and the public • Establish the necessary and appropriate monitoring, auditing, incident reporting, investigation and analysis mechanisms for safeguarding health and safety 				

	<p>Explore the importance of establishing a positive safety culture at individual, group, organizational and inter-organizational levels and challenge attitudes and behaviours which are dangerous for health and safety.</p> <ul style="list-style-type: none"> • Explore in depth, theoretically and (if needed) experimentally risk perception in an individual as well as societal level • Experiment and develop novel mathematical and / or statistical methods to assess, manage and mitigate risk • Experiment with risk identification and analysis • Choose and develop – depending on the case – probabilistic and/ or stochastic methodologies for the assessment of risk • Develop and apply a deterministic risk assessment – based on relevant legislation and accepted knowledge of cause-effect relationships of H&S hazards • Explore and develop advanced safety decision systems • Integrate the results of risk assessment in safety systems and explore risk management options 		
Prerequisites	NONE	Co-requisites	NONE
Course Content	<p>This course will arm students in mastering safety science and risk and will underline its multi-disciplinary role. The class will provide students with all the necessary information and techniques surrounding the design and implementation of a risk-based, tailor-made safety management system (SMS). Legal and organizational issues will be put into context and the importance of feedback mechanisms and risk communication strategies will be illustrated and applied. Safety culture will be explained in detail; risk assessment and control implementation techniques will be imparted and analysed critically in relation to their appropriate application. At the end of the course students should be in a position to illustrate excellent knowledge and understanding of numerical and non-numerical risk assessment techniques, to design and implement appropriate risk management measures and, finally, to be able to communicate effectively risks.</p> <p>Topics that will be discussed:</p> <ul style="list-style-type: none"> • Cyprus H&S legislation (Οι περί Ασφάλειας και Υγείας στην Εργασία Νόμοι του 1996 – 2011) • EU H&S Legislation e.g. Directive 89/391 Health & Safety Framework, Directive 82/501 Major Hazards (Seveso I) and Directive 96/82 Major Hazards (Seveso II) 		

- Relative benefits and effectiveness of (a) self-regulatory goal-directed H&S legislation and enforcement and (b) prescriptive compliance orientated legislation and enforcement
- H&S Institutions (global, EU and national)
- Role and contribution of H&S management to Enterprise Risk Management and Corporate Governance
- Design of H&S management systems and relevance of standards such as OSHAS 18000
- Planning and organization of a H&S management system
- H&S risk reduction and control options, with practical examples
- Internal monitoring and audit and review mechanisms for H&S, including incident reporting, investigation and feedback to risk assessment and training.
- The link between risk assessment and safety decision-making in the SMS
- Risk communication
- Safety Culture
- Leadership
- Influencing safety culture (e.g. leadership, standards, H&S KPIs etc)
- Human error and accident causation
- High Reliability Organizations (HRO's)
- Resilience
- Stochastic modelling with particular emphasis on Markov Chain analysis (homogeneous and heterogeneous) and Monte Carlo simulation (including the development of random number generators)
- Cultural, Social Risk
- Psychological and social-psychological risk
- Political and socio-political risk
- Economic and socio-economic risk
- Organizational risk
- Risk society and risk culture (Ulrich Beck)
- Mary Douglas (culture, risk and blame)
- Perrow (accidents)

	<ul style="list-style-type: none"> • Individual/psychological causes of accidents (Reason, Hale, Glendon, Slovic, Fischhoff) • Socio-technical causes of accidents (Rasmussen) • Social-psychological causes of accidents (Weick) • Integrative theories of accident causation (Le Coze, Burke & Cooper, Turner) 								
Teaching Methodology	Face-to face								
Bibliography	<p>Michael Quinlan, Philip Boyle and Felicity Lamm. <i>Managing occupational health and safety; a multidisciplinary approach</i>. Latest edition. South Yarra: Palgrave MacMillan</p> <p>Ian Glendon, Sharon Clarke and Eugene McKenna, <i>Human Safety & Risk Management</i>, Latest edition, CRC Press/Taylor & Francis</p> <p>Tony Boyle, <i>Health & Safety: Risk Management</i>, Latest edition, Institution of Occupational Safety & Health, (ISBN9780901357410)</p> <p>Regina E. Lundgren, <i>Risk Communication: A Handbook for Communicating Environmental, Safety, and Health Risks</i>, Wiley-IEEE Press, Latest Edition</p>								
Assessment	<table border="1"> <tr> <td>Examinations</td> <td>60%</td> </tr> <tr> <td>Project</td> <td>30%</td> </tr> <tr> <td>Class Participation and Attendance</td> <td>10%</td> </tr> <tr> <td></td> <td>100%</td> </tr> </table>	Examinations	60%	Project	30%	Class Participation and Attendance	10%		100%
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Language	English								