Skill-Builders for Engineering Leaders

Risks in Project and Technology Development Module

Engineering Innovation Institute or Leadership Institute Faculty
Herbert Wertheim College of Engineering, University of Florida

Contact Hours	1 hour consisting of a 50-minute session
Target Audience	Undergraduate and graduate students
Learning Objectives	Students will be able to: 1. Interpret and describe the concept of risks, risk analysis, risk assessment and risk management. 2. Appraise methods to analyze, interpret and assess risks and approaches to manage risks. 3. Identify and assess the roles and responsibilities of the engineer in evaluating and managing risks in technology development.
Session Overview	The volatile, uncertain, complex and ambiguous business environment within which engineering-based companies must now effectively operate has significant implications on the risks that could impact their continuing viability. The ability for engineers and companies to identify and manage risks is more critical than ever before. The module consists of instructor-provided topical overviews, participant discussions, examples and an exercise that will assist in understanding and applying the risk-related concepts.

Session	
Key Content	**Approach**
Exploring the concepts of risk	• Concept of risk defined, types of risks, risks in context • Concepts of risk analysis, risk assessment, and risk management • Overview of one famous example (video based)
Evaluating risks – the risk management process	• Overview of the individual components of the process - identifying hazards - risk calculations - risk assessment - risk rankings - cost and risk-benefit analyses - risk decisions

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Key Content	Approach
The engineer's roles and responsibilities in balancing risks with innovation and technology development	• Brief overview and discussions about the responsibilities of engineers in technology and innovation • Review brief video and discussions about innovations and ethics • Brief overview of the concept of standard of care in engineering and product/technology development
Example Case Study Application – Group Exercise	• Brief case study review
Resources Provided • Module presentation materials • Case study example summary • Vanderzee, P.J. and M.C. Loulakis, July 2008. Technology Adoption and the Standard of Care. National Society of Professional Engineers P.E. magazine excerpt.	

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