SANDERS NUCLEAR ADVISORY

Nuclear Engineering Consulting

2024

Nuclear Training, Education & Qualification

Presentation to [redacted] - April 2024

sandersnuclearadvisory.com

Outline

- Customized pre-training to enter nuclear field
- Bootcamp (for skilled nuclear workers)
- Nuclear Engineering Graduate studies

Customized Pre-training

High School/Undergraduate

Courses and workshops focused on STEM education and opportunities in the nuclear industry.

- Expectations and lifestyle choices
- Introduction to pre-nuclear engineering
- Sustainability and life cycle of the nuclear industry
- Environmental protections and safety

Professional

Customized training for professional workers (e.g., accountants, administrative staff) wanting to enter the nuclear field based on industry needs.

- Focus on the nuclear culture
- Emphasize on qualification training
- Terminology and practices
- Regulations and the regulatory environment

Nuclear Bootcamp

Intensive 8-10 week Qualification & Training

Bootcamp is designed to deliver training on specialised topics based on nuclear industry demands. University credits and/or continuing education credits offered.

- *The bootcamp is geared towards students and early-career professionals.*
- *The students will be provided with the tools and understanding needed to approach the clean energy challenges of today and tomorrow.*
- *The bootcamp consist of a mix of basic theory and hands-on application.*
- *Multiple disciplines are included, such as nuclear technology, engineering, business, public policy, and stakeholder engagement.*

Graduate Level Nuclear Education

Certificate Programs

Certificate programs in nuclear engineering for graduate students or professionals include:

- Nuclear communication and stakeholder engagement
- Nuclear safety
- Nuclear safeguards and security
- Nuclear waste management and decommissioning

Master of Science in Nuclear Engineering

Provides a solid background in either applied nuclear science and engineering.

- Can ‘double-dip’ with certificate education programs
- Introductory courses offered to invite other disciplines (e.g., health physics, mechanical engineering)
- Thesis vs. non-thesis track/pathway
- Integrated Bachelor of Science – Master of Science track/pathway

Graduate Level Courses

Topics of Courses Offered

- Fundamentals of Nuclear Engineering
- Introduction to Nuclear Criticality Safety
- Nuclear Safety Engineering
- Monte Carlo Methods in Nuclear Engineering
- Radiation Monitoring and Safeguards Systems
- Radiation Transport Applications in Nuclear Engineering
- Waste Management and the Nuclear Fuel Cycle
- Probabilistic Risk Assessment
- Nuclear Power Engineering
- Nuclear Reactor Analysis

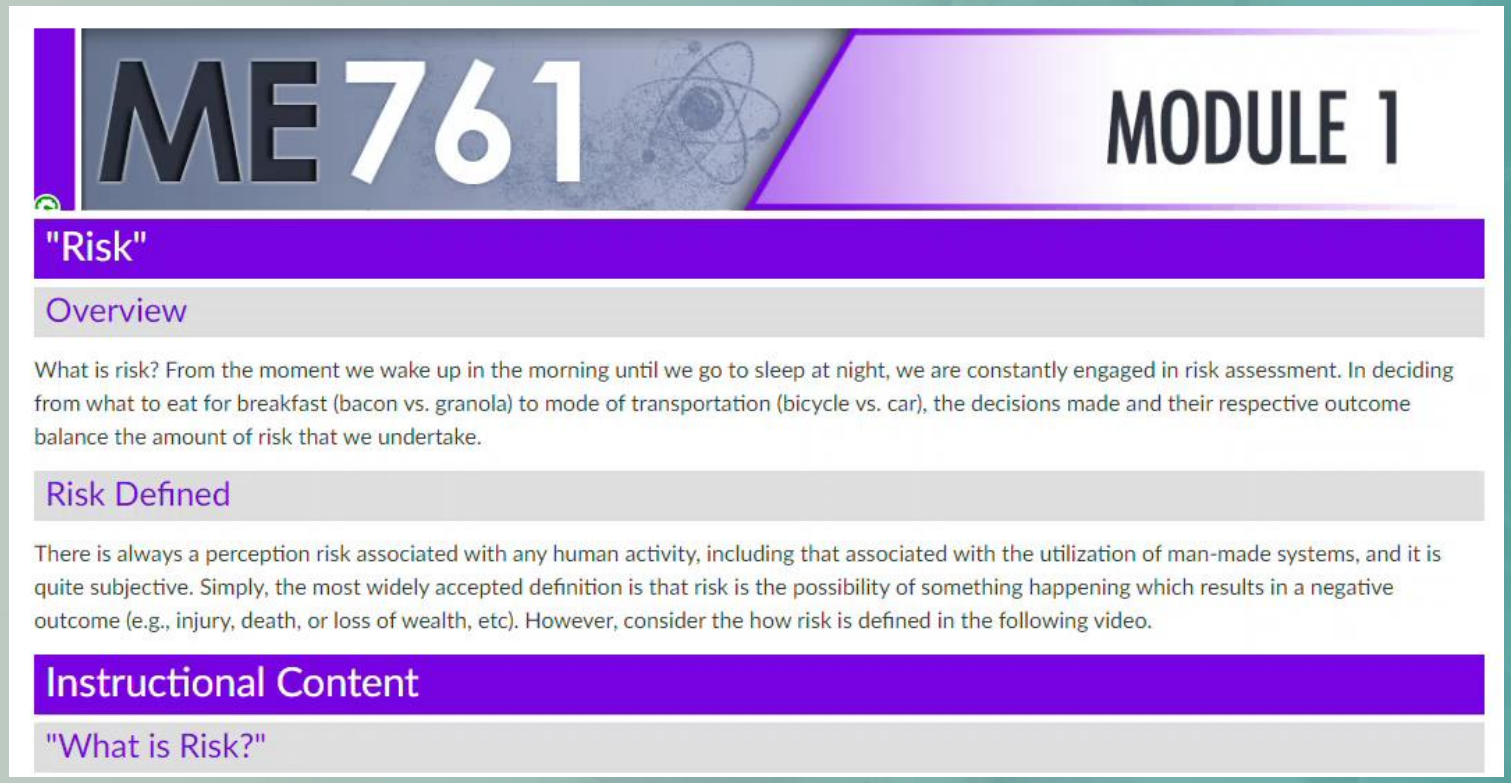
Teaching Examples & Future Collaboration Opportunities

- Example of course presentation and teaching tools:

https://youtu.be/pIR7uvyAZUg

MAGIC MERV

Teaching Examples



ME761 MODULE 1

"Risk"

Overview

What is risk? From the moment we wake up in the morning until we go to sleep at night, we are constantly engaged in risk assessment. In deciding from what to eat for breakfast (bacon vs. granola) to mode of transportation (bicycle vs. car), the decisions made and their respective outcome balance the amount of risk that we undertake.

Risk Defined

There is always a perception risk associated with any human activity, including that associated with the utilization of man-made systems, and it is quite subjective. Simply, the most widely accepted definition is that risk is the possibility of something happening which results in a negative outcome (e.g., injury, death, or loss of wealth, etc). However, consider the how risk is defined in the following video.

Instructional Content

"What is Risk?"

*this multimedia file is not functional in a PDF document format. Available in other formats upon request.

2024

THANK YOU!

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