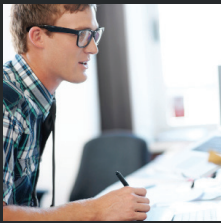




RISK ENGINEERING CERTIFICATE

Program Overview: This certificate focuses on the fundamentals of risk engineering and management. Learn quantitative methods for risk modeling and explore the human elements of risk engineering.



CE 8580 Fundamentals of Risk Engineering: Measures of risk, vulnerability, and consequence; qualitative and quantitative methods for risk analysis and estimation; consequence models; risk communication and acceptance criteria; and treatment and management of risk. Focus on concepts, theories, and applications for risk engineering and management.



CE 8560 Human Factors in Risk Engineering: Overview of theories in sensation, perception, cognition and motor control of humans related to the design of systems; application of theories to risk engineering and human reliability assessments in order to reduce risk within systems and environments.



CE 8570 Uncertainty Modeling for Risk Engineering: Concepts of uncertainty, random variables, and probability in risk engineering; fundamentals of sampling, estimation, inference, test of goodness-of-fit and regression; and survival analysis. Topics and examples are focused on risk of constructed facilities.



CE 8590 Quantitative Methods: Fundamentals of uncertain information processing, Monte Carlo simulation, risk analysis tools, event tree analysis, fault tree analysis, decision tree and risk-based decision analysis, Bayesian updating for decision making, value of information analysis, and risk analysis for complex systems.

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