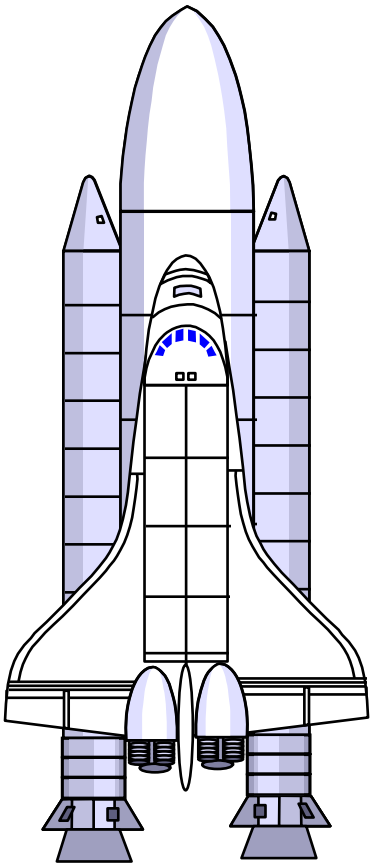
NSTC

NASA SAFETY TRAINING CENTER

Safety Course

ADVANCED SYSTEM SAFETY PRACTICE #021



Risk Management, synonymous with System Safety, is a doctrine of management practice supported by analytical engineering techniques and aimed at ensuring that operating risks will be recognized and controlled within acceptable limits.
This advanced course begins with a brief review of fundamental risk management concepts. It provides an in-depth understanding of the management doctrine and presents the two most often used models of that doctrine's successful application within organizational structures. The inductive analytical techniques presented in the basic course (i.e., Preliminary Hazard Analysis; Failure Modes and Effects Analysis) are then reviewed, as are methods of applying these techniques and interpreting their results. Attention next turns to in-depth treatment of the logic tree methods that are customarily associated with Probabilistic Risk Assessment - i.e., Fault Tree Analysis, Event Tree Analysis, and Cause-Consequence Analysis. Both quantitative and qualitative applications are dealt with. A number of system diagnostic methods, and uncomplicated sensitivity tests, guide redeployment of resources within the system to reduce overall risk, support cost-benefit trade studies, and find and evaluate system threats posed by "common causes." Advantages and limitations of each technique for application to practical system analysis problems are presented. The links between fault domain and success domain are presented, and the participant is prepared to carry out system analysis "translations" from Fault Tree Analysis to Reliability Block Diagramming to Event Tree Analysis.

Instructor: Pat L. Clemens has over 30 years of experience in system engineering design and safety analysis. He has national board certification by examination in four areas of safety discipline, and he has experience in developing, applying, and directing use of system safety analytical techniques and program management. He is certified by the Department of Energy as an accident/incident investigator and has participated in and led many investigations, including complex cases of sabotage and of multiple fatalities. He has conducted many system safety short courses for NASA, the Air Force, the American Society of Safety Engineers, the System Safety society, private industry and universities. He has served as a consultant for the NATO/Advisory Group on Aeronautical Research and Development, has served for two academic years as Resident Visiting Professor at the von Karman Institute for Fluid Dynamics (Belgium), and has been a lecturer at various national and international conferences and universities. He has authored more than 40 published technical papers in his field.

Dates:
January 10 – 14, 2005
8:00 a.m. - 12:p.m.
Location:
Marshall Space Flight Center

This course provides 1.5 Continuing Education Units

Target Audience:

- Recommended for Managers and Engineers whose work involves recognizing and managing system risks.

To register, please contact:

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