The System Design and Operational Effectiveness (SDOE) Program at
Stevens Institute of Technology, in Collaboration with
The Defense Acquisition University, and
SOLE –The International Society of Logistics, offers a Four Course (12 Credit)...

STEVENS Institute of Technology

GRADUATE CERTIFICATE PROGRAM IN SYSTEMS & SUPPORTABILITY ENGINEERING

This Graduate Certificate Program is a stepping stone towards a Master's Degree in Systems Engineering from Stevens Institute of Technology.

Courses offered in week-long modules at various locations in the US, Europe & Asia.

To enroll and obtain a course schedule, log onto the SDOE website at
www.stevens-tech.edu/sdoe

Required Courses in the 4-Course Graduate Certificate:

SYS-625:
System Operational Effectiveness and Life Cycle Analysis

SYS-645:
Design for System Reliability, Maintainability, and Supportability

Two of the Following Three:

SYS-640:
System Supportability and Logistics

SYS-650:
System Architecture and Design

SYS-660:
Decision and Risk Analysis

SYS-625 System Operational Effectiveness and Life Cycle Analysis (Fundaments of Systems Engineering)

MODULE DESCRIPTION: This course discusses fundamentals of systems engineering. Initial focus is on need identification and problems definition. Thereafter, synthesis, analysis, and evaluation activities during conceptual and preliminary system design phases are discussed and articulated through examples and case studies. Emphasis is placed on enhancing the effectiveness and efficiency of deployed systems while concurrently reducing their operation and support costs.

SYS-650 System Architecture and Design

MODULE DESCRIPTION: This course discusses the fundamentals of system architecting and the architecting process, along with practical heuristics. Furthermore, the course has a strong "how-to" orientation, and numerous case studies are used to convey and discuss good architectural concepts as well as lessons learned. Adaptation of the architectural process to ensure effective application of COTS will also be discussed.

SYS-645 Design for System Reliability, Maintainability, and Supportability

MODULE DESCRIPTION: This course provides the participant with the tools and techniques that can be used early in the design phase to effectively influence a design from the perspective of system reliability, maintainability, and supportability. Students will be introduced to various requirements definition and analysis tools and techniques. Further, the students will learn to exploit this phase of the system design and development process to impart enhanced reliability, maintainability, and supportability to the design configuration being developed. Examples and case studies will be used to facilitate understanding of these principles and concepts.

SYS-640 System Supportability and Logistics

MODULE DESCRIPTION: The supportability of a system can be defined as the ability of the system to be supported in a cost effective and timely manner, with a minimum of logistics support resources. The required logistics resources might include test and support equipment, trained maintenance personnel, spare and repair parts, technical documentation, and special facilities. For large complex systems, supportability considerations may be significant and often have a major impact upon life-cycle cost. It is therefore particularly important that these considerations be included early during the requirements definition and architecture formulation phases. Accordingly, the module participants will be introduced to system supportability engineering methods, tools, and metrics, while also focusing on the development and optimization of specific elements of logistic support.

SYS-660 Decision and Risk Analysis for Complex Systems

MODULE DESCRIPTION: This course is a study of analytic techniques for rational decision making that addresses uncertainty, conflicting objectives, and risk attitudes. This course covers modeling uncertainty; rational decision making principles; representing decision problems with value trees, decision trees and influence diagrams; solving value hierarchies; defining and calculating the value of information; incorporating risk attitudes into the analysis; and conducting sensitivity analyses.

CONTACT INFORMATION:

Dr. Dinesh Verma
Associate Dean & Professor of Systems Engineering
dverma@stevens-tech.edu
201-216-8645

Ms. Cara Elson
Assistant Director
The SDOE Program
celson@stevens-tech.edu
201-216-8334