BENEFITS

Consideration of the human (e.g., operator, user, maintainer) is a critical component to Systems Engineering. The goal of Human Systems Integration is to account for human capabilities and limitations when designing and evaluating complex systems, in order to enhance safety, efficiency, usability, and reduce life cycle costs.

COURSE OBJECTIVES

Topics include transportation, health care, manufacturing, military, and other complex control systems.

Students successfully completing this course will be able to:

- Explain how perception, cognition, biases, trust, and decision-making influence human-system interactions
- Implement concepts of human capabilities and limitations to the design and evaluation of existing and new systems
- Design studies to examine system performance with respect to the human
- Understand basic principles in human-automation interactions and supervisory control

INSTRUCTOR BIO

Dr. Erika Miller is an Assistant Professor in the Mechanical Engineering Department and the Systems Engineering Program. Her research is centered on integrating humans with complex systems to enhance safety and performance in the design and evaluation of infrastructure; primarily applied to the transportation domain. Her work focuses on modeling human behavior and cognitive workload over time to evaluate the interactions between humans and machines, with an emphasis on developing appropriate trust and maintaining situational awareness of human operators with autonomous systems.