



ENGINEERING MISSION SUCCESS

Systems Engineering Disciplines

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Training Curriculum

bd Systems' comprehensive training program familiarizes junior engineers and reacquaints senior engineers with the fundamentals, methodologies, tools, and practices of systems engineering. Structured to enable engineers to apply their own experiences while building upon a curriculum of systems engineering concepts and techniques, bd's training program gives engineers a solid foundation in performing design, development, and testing of complex systems.

About bd Systems Engineering Training

bd's Systems Engineering curriculum provides fundamental instruction of engineering concepts and common processes, tools, and techniques relevant to space and missile systems development and sustainment efforts. Intended audiences include project officers, junior systems engineers, engineers or managers in disciplines that perform or support systems engineering functions, or experienced engineers who simply seek currency on new policies, methods, and practices.

Leveraging materials such as our Systems Engineering Handbook (CD), instruction module slides, and supplementary source material, this curriculum discusses the major constituents of the Systems Engineering Process, including Requirements Analysis, Functional Analysis and Allocation, Synthesis, and System Analysis and Control. Our forum provides continual interaction and feedback among these activities, with refinement of their outputs as the program progresses.

The training curriculum applies the systems engineering process flow that illustrates how requirements, allocation, and design baselines are iteratively developed to arrive at a final product configuration baseline decision.

Course Prerequisites

Before you begin, we recommend students have a basic knowledge of systems acquisition lifecycle phases and a basic understanding of the engineering design process. Our coursework expands on these key concepts.

Course Instructional Objectives

1. Attain a broad understanding of systems engineering concepts and techniques.
2. Gain familiarity with concept development and operational capabilities and requirements development processes.
3. Understand the system definition process: architecture and requirements development, system and interface specifications development, advancing technologies, system verification and validation, and system integration.
4. Understand the role of engineering tools in the system development process.
5. Understand how trades and effectiveness analyses influence optimization of system design choices.
6. Understand how analyses and control activities interact with other systems engineering activities to achieve technical and programmatic objectives.
7. Understand how integration of activities and resources support the system development process

Course Topics

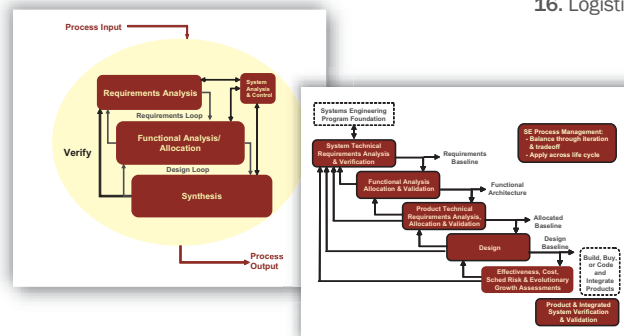
1. Systems Engineering Overview
2. Systems Engineering Process
3. Review of Acquisition Phases
4. Mission Analysis, Capabilities and Requirements Generation
5. Architecture Definition
6. Systems Definition
7. Specification Trees, Specifications, and Interface Documents
8. Engineering Tools
9. Validation and Verification
10. Optimization
11. Traceability And Control
12. Risk Management
13. Technical Reviews
14. Manufacturing and Producibility
15. Integration
16. Logistics Engineering.

About bd Systems

bd Systems is a woman-owned small business that provides engineering and information technology services for government and private industry. Based in Torrance, California, bd Systems has over 20 operating locations nationwide.

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Left: Systems Engineering Process
Right: Overall Systems Engineering Process