



ENGINEERING FOR SUCCESS IN THE SPACE INDUSTRY

A PRACTICAL 3-DAY COURSE FOR ENGINEERS IN ALL DISCIPLINES!

Course Overview

This course introduces the unique challenges of system development in the space industry and presents an integrated approach for addressing them in a manner that helps ensure not only a successful mission but also reduced total cost (and more fun along the way!). The course introduces and explores ten principles for effective engineering in the space industry:

1. Never stop learning, and don't become too specialized.
2. Adopt the right attitude: Take responsibility for quality and mission success.
3. Allow others to have ownership of their products.
4. Constantly strive to improve communication and teamwork.
5. Follow a sound engineering approach.
6. Get work done faster by improving efficiency and understanding, not by compromising quality.
7. Think ahead to avoid problems, and keep everything as simple as possible.
8. Establish an effective quality system.
9. Be willing to accept risks, but only those you and the other stakeholders understand.
10. Don't let the fire go out!

The ESSI course addresses requirements development, design, verification planning, quality assurance, risk assessment, and team communication. Emphasis is on mechanical aspects of system development. The instructor shares numerous examples, case histories, and personal experiences to drive home the key points.

The objectives are to help you...

- understand what it takes to design, build, and test a spacecraft that works, given the unique challenges of the space industry.
- understand how developing a spacecraft within budget and schedule requires not only good engineering, but also effective teamwork and communication.
- acquire a healthy attitude regarding quality, mission success, and personal responsibility.
- learn important lessons from multiple case histories.
- become a better engineer!

Target Audience

Space-industry engineers in all disciplines and of all levels of experience

Course Developer & Teacher



Tom Sarafin is President and Chief Engineer of Instar Engineering and Consulting, Inc. He has worked full time in the space industry since 1979 as a structural engineer, a mechanical systems engineer, a project manager, and a consultant. Since founding Instar in 1993, he's consulted for NASA, DARPA, the DOD Space Test Program, Lockheed Martin, DigitalGlobe, Space Systems Loral, Spaceflight Industries, and other organizations. He was a key member of the team that developed NASA-STD-5020, "Requirements for Threaded Fastening Systems in Spaceflight Hardware" (March 2012). He is the editor and principal author of *Spacecraft Structures and Mechanisms: From Concept to Launch* and is a contributing author to *Space Mission Analysis and Design*. He's also the principal author of a series of papers titled "Vibration Testing of Small Satellites." Since 1995, he has taught over 250 courses to more than 5000 engineers and managers in the aerospace industry.

Instar also offers the following courses: "Ten Principles for Successful Space Programs" (TenP), "Design and Analysis of Bolted Joints" (DABJ), "Space Mission Structures, From Concept to Launch" (SMS), "Structural Test Design and Interpretation" (STD I), "Vibration Testing of Small Satellites" (VTSS), and "Vibration Testing on an Electrodynamic Shaker" (VTES).

Go to instarengineering.com/available_courses.htm for details.

