



TEN PRINCIPLES FOR SUCCESSFUL SPACE PROGRAMS

Course Overview

This course addresses the most challenging problem in the space industry: How do we reduce cost and schedule time while also trying to ensure a successful mission? After examining the driving issues in space-system development, the instructors introduce ten principles for successful space programs.

1. Invest in knowledge and understanding.
2. Adopt the right attitude: quality and mission success first.
3. Instill ownership and responsibility.
4. Constantly strive to improve communication and teamwork.
5. Follow a sound engineering approach.
6. Reduce cost through good engineering and good management, not by compromising quality.
7. Think ahead to avoid problems, and keep everything as simple as possible.
8. Establish an effective quality system that involves everyone.
9. Be willing to accept risks, but only those you and the other stakeholders understand.
10. Make sure you—and everyone else—have enough time, resources, and freedom to do things right.

The course then explores key aspects of leadership, management, and engineering within the framework of those principles. The instructor shares many examples, case histories, and personal experiences to drive home the key points. The objectives are to provide a fresh focus on quality and mission success, build understanding, spur thought, and help your program improve efficiency of its organization and processes—from the top level of management on down to how every engineer or technician approaches his or her job.

Target Audience

All leaders, managers, supervisors, systems engineers, and consultants involved in procuring, specifying, designing, producing, or testing spacecraft, launch vehicles, or vehicle components.

Course Formats

Two full days or four 4-hour days. **Note:** Instar's 3-day Engineering for Success in the Space Industry (ESSI) course is closely related to TenP and aimed at engineers rather than leaders and managers.)

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: "Engineering for Success in the Space Industry" (ESSI), "Space Mission Structures, From Concept to Launch" (SMS), "Structural Test Design and Interpretation" (STD I), "Vibration Testing of Small Satellites" (VTSS), "Design and Analysis of Bolted Joints" (DABJ), and "Vibration Testing on an Electrodynamical Shaker" (VTES). Go to instarengineering.com/available_courses.html for details.

