



SOUTHWEST RESEARCH INSTITUTE



# Introduction to Propulsion Simulation Using NPSS – Winter Short Course

Southwest Research Institute  
6220 Culebra Rd.  
B209 3<sup>rd</sup> Floor EDO Training Room  
San Antonio, TX

March 19 – 21, 2024

Days 1 – 3: 8:30 to 4:30      Day 4: 8:30 – 12:00

## Course Overview

NPSS is an object-oriented, multiphysics, engineering design, and simulation environment that enables the development, collaboration, and seamless integration of system models. It is primarily used in aerospace applications for modeling air and liquid propulsion systems and for the integrated analysis of aerospace vehicles. This introductory course is divided into seven modules that cover the basic concepts and features of NPSS. Each module is accompanied by hands-on exercises. After completing the course, the student will be able to create and run system models using the Introduction to Propulsion Simulation Using NPSS® Software. The course is intended for engineers responsible for modeling or analyzing the performance of thermo-dynamic and fluid/thermal systems.

Instruction provided by experienced SwRI staff who also serve on the NPSS development team.

## Cost

The short course cost is \$1,350 USD per registrant. [Registration](#) includes 3.5 days of course instruction, training material on a thumb drive, class exercises, and three lunches.

## Course Topics

- Introduction to NPSS
- Anatomy of an NPSS Simulation
- NPSS Elements Needed for Class
- Building a Model
- Variables, Arrays, and Units
- Functions
- The Guts of the Elements
- The NPSS Solver
- Design and Off-Design Analysis
- Post Processing and Debugging
- NPSS Modeling Workshop

For more information, please contact:

Griffin C. Beck  
210.522.2509  
[griffin.beck@swri.org](mailto:griffin.beck@swri.org)

