

## **GSAW 2015 Tutorial I:**

Introduction to Systems and Software Architecture

**Length:** Half day

### **Overview:**

#### Course Outline

1. What's An Architecture?
  - Context: system development lifecycle
  - Who cares?
  - What do they care about?
  - How to describe a system
  - How to sell a system
2. Architecting History
  - Systems Engineering – INCOSE and the SEBOK
  - Software Modeling – Data Flows to UML
  - The USC School – Art and Practice of Systems Architecting
  - Software Engineering Institute – Product Lines and Evaluation
  - DoDAF and other frameworks – AFs and Enterprise Architectures
3. Architecting Processes
  - Architecture Construction
  - Architecture and Design
  - Architecture Evaluation
  - Architecting Tradeoffs
4. Architecture Styles
  - Software Architecture Styles
  - Distributed Processing Architectures
  - Service-Oriented Architecture and Cloud Architectures
  - Software and Systems Architecture
  - System of Systems Architecture
  - Enterprise Architecture
5. Wrap Up and Conclusions

**Instructor:** John Reeves, The Aerospace Corporation

### **Biography:**

**John Reeves** is a systems architect with over twenty years of experience in US Air Force and related agency systems development. He started his architecting career in 1992 on the Global Protection from Limited Strikes (GPALS) information architecture, the first enterprise level systems architecture to use object-orient modeling theory. He has led architecture teams for ground systems, satellite systems, processing systems, and manned and unmanned aircraft and support systems. He holds a Ph.D in computer science from UCLA (1991).

**Description of Intended Students and Prerequisites:**

Systems and software development and acquisition professionals who will lead, participate in, manage, or evaluate a systems or software architecture project. No prior architecture experience is required. Experience with large-scale systems or software development is recommended, but not required.

**What can Attendees Expect to Learn:**

The basics of systems and software architecting. What an architecture is, why architecting is a fundamental technical skill, how to construct an architecture, what to look for in an architecture, how to plan and execute an architecture project.