Integration @Large Course
Enterprise and Complex systems
By Dr. Leah Goldin

Introduction:

Historically, system integration was confined to the technical aspects of hardware and the interconnectivity of computing components. As industry and knowledge evolved, integration began to include software, data, and communication, while Information technology (IT) has become an enabler for newly designed processes by eliminating limitations of time, location, or organizational structure.

Large scale systems that are built over the internet, known as Enterprise, have parts distributed geographically that need to operate independently of time and location, i.e., parts of system located in one place may send a command to other parts of the system located in another place that will operate later. Today's Enterprise comprises the convergence of knowledge, technology, and human performance.

This course about Integration at Large focuses on what happens when system integration represents a progressive and iterative cycle of melding technologies, human performance, knowledge, and operational processes together

Objectives:

At the end of this course attendees will be able to:

- Understand enterprise architecture components related to integration
- Learn about system interconnectivity and interoperability
- Learn about system integration sociotechnical solutions
- Apply integration creteria a-priory, during system planning

Audience:

System Engineers, HW/SW Engineers, and Project Managers V&V and System Testing

Challenges & Methods:

A. Integration concepts and definition

   We'll start by learning about integration definitions and inherent issues of process integration as part along system development lifecycle.

B. Enterprise Architecture

   We'll learn about Enterprise Information Architecture, along the different system phases of Execution, Development, and Operations.

C. Integration States & Business Performance

The higher the system integration state is, the higher the business performance ability.

D. Complex Systems

The social solution of technical problems and the meaning of integration failure, as part of system integration

Agenda:

1	Introduction & Process	a. System Integration technical, human, and organizational drivers. b. Process integration: planning and specialty of reliability, maintainability, LSI, environment, safety, etc.
2	Enterprise System Integration	c. Enterprise architecture, d. Information services, e. global manufacturing enterprise
3	Integration states	f. System interconnectivity and Interoperability g. Workshop: states of system integration
4	Complex systems	h. System integration and the social solution of the technical problems, i. Failure and Misunderstanding,

About the Instructor:

Leah Goldin, CEO of Golden Solutions http://thegoldensolution.com/

Dr. Goldin is an independent consultant specializing in Requirements Engineering, System Engineering and Software Engineering, Process and Quality.

In her career, Dr. Leah Goldin developed embedded systems, and filled various management and technical roles, including development, verification and integration, SQA and process improvement. The companies she has worked for include Rafael, IAI, MBT, Comverse, NICE Systems, NDS, Sapiens, Mercury/HP, Given Imaging, Orbotech, etc.

Dr. Goldin divides her time between consulting to high-tech companies and teaching; she is a senior lecturer in Afeka College at the Software Engineering and System Engineering departments, and was the Head of the Software Engineering Department at Shenkar College.

Dr. Goldin received her Ph.D. from the Technion Computer Science department, where her research focused on Requirements Engineering. She is a senior member of IEEE, and currently serves as the Chair of the Israeli Chapter of the IEEE Computer Society.