

SYS/SDOE 605 SYSTEMS INTEGRATION

ASysT is a collaborative endeavor of Analytic Services, Inc. (ANSER) and the School of Systems & Enterprises (SSE) at Stevens Institute of Technology

Classes held on-site at ANSER, in Arlington, VA. For schedule information, please visit www.asysti.org

This modular course can be taken for graduate credit towards a **Master's in Systems Engineering** or as part of a professional development program. Graduate credits, Certificates and Master's Degrees awarded by Stevens Institute of Technology.

MODULE DESCRIPTION AND OBJECTIVES

This course is designed to provide the participants with an understanding of the scope of systems integration, different SI approaches to design, architect and implement integrated systems, tools and techniques to measure the successful implementation of SI and best practices. The objective of the course is to provide the students an understanding of the technical and business process issues involved in systems integration. Systems integration process is illustrated over the life cycle concept of projects – during design, development, implementation, testing and production. Examples will be drawn primarily from the Information Technology (IT) industry domain but will be supplemented with guest speakers. The students will learn the theory and practice of business process integration, legacy integration, new systems integration, COTS integration, application integration (ERP, CRM, and Supply Chain), architecture integration (protocols, connectivity, and database systems), integrated program management. Specific focus will be given to issues of interface management and testability.

MODULE ORGANIZATION

This modular course combines lectures and readings to develop an understanding of the system integration concepts and principles. Guest speakers/practitioners from industry will provide participants with real-life case studies. Lastly, the team project allows participants to integrate their knowledge in a team environment.

MODULE AUDIENCE

This modular course would be of interest to systems integrators, systems engineers, systems designers and architects, program and project managers, and test planners and managers. People who are involved in any aspect of systems integration and testing would find the module useful.

COURSEWARE

Participants receive a binder containing course notes and additional readings specifically organized for this course.

MODULE DIRECTOR

Dr. Rashmi Jain, Associate Professor
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MODULE REGISTRATION & INFORMATION

Please register early. Space is limited!
For additional information:
Contact **Shobi Sivadasan**, Shobi.Sivadasan@stevens.edu, 201.216.8334 or download the SDOE Graduate Enrollment Form from our website at www.stevens.edu/SDOEnroll and fax it to 201.216.5080.

For more information, visit our website at www.asysti.org

DAY 1	
SESSION 1	Overview – Introduce the course content, teaching methodology, guidelines for the exams and the final project and their grading. The concept of Systems Integration will be introduced with the help of its definitions and approaches.
SESSION 2	Systems Integration Architecture – Understand the concept, approaches, and drivers for systems integration architecture.
DAY 2	
SESSION 3	Business Processes Integration – Understand the concept of a business process and the need to conduct integrated business process analysis as a prerequisite for systems integration.
SESSION 4	Integrated Business Requirements Analysis – Understand the process of conducting integrated requirements collection and analysis, why is it important to analyze requirements in an integrated manner.
DAY 3	
SESSION 5	Commercial-off-the-shelf Products Integration – Understand the issues related to integrating COTS products, factors affecting COTS integration, benefits of COTS, pitfalls of COTS, Critical Success Factors, and challenges.
SESSION 6	Interoperability and Standards - Understand the role of interoperability and standards in SI. Topics include: interoperability concept, models, requirements, activities and standards for interoperability and the metrics for interoperability.
SESSION 7	Interface Control and Management – Understand the role of interface control and management in SI. Topics include: definition, assessment, and documentation of interfaces, Interface Control Documents (ICDs), Key Components of Interface Control, Interface Management, Interface Architecture, System Interface Agreement, and Interface Definition Language (IDL) and Technologies.
DAY 4	
SESSION 8	Integrated Testing, Verification, Validation – Understand the concepts of testing, verification and validation and their objectives.
SESSION 9	Integrated Program Management – Understand the need and challenge to integrate the program management and system integration function on large/complex multi-vendor project.
DAY 5	
SESSION 10	Extended Enterprise Application Integration – Understand the concept of EAI and EEAI and the role of system integration in designing and implementing them.
SESSION 11	System Integration Project Presentations, Module Evaluation and Conclusion.