The 14th Scandinavian Summer School Week

Systems Engineering Fundamentals

Model-based Systems Engineering

Logistics Engineering and Management

Syntell

in cooperation with

STEVENS Institute of Technology

The Scandinavian Summer School Week is a truly unique and intense learning exercise held annually. The successful concept combines theory and practice, hard work and social activities in an inspiring environment. The week features internationally recognized lecturers and participants from industrial sectors such as aerospace, automotive, defense, transport and utilities.

The 14th Scandinavian Summer School Week

The Scandinavian Summer School Week is an annual event that takes place in the Nordic countries since 1999. It is open for international participation and serves two major purposes:

1) *to teach the principles of how to develop and manage effective systems and;*

2) *to support networking between practitioners*

This year we are proud to present three courses during the Scandinavian Summer School Week:

- Systems Engineering Fundamentals
- Model-based Systems Engineering
- Logistics Engineering and Management

Each course is presented by internationally recognised lecturers with teaching experience from universities such as Stevens Institute of Technology, Cranfield University and the Royal Institute of Technology as well as solid industrial experience from organizations such as Lokheed Martin, AT&T, EDS, Nokia, Rolls-Royce, British Aerospace, Saab, UK MoD, Volvo and the Swedish Defence Materiel Administration (FMV).

Instructional Approach

All courses during the Summer School Week combine theory with engineering practice and real-world problems. Therefore, a close dialogue between students and instructors is encouraged. This is enabled by a balanced mix of lectures, group exercises and team building activities. The courses have a "how-to" orientation, and senior guest speakers from industry will provide insight into the application of the methods and tools discussed. In addition, a case will be worked upon by the delegates to provide hands-on experience.

Target Group

The Scandinavian Summer School Week is aimed at anybody involved in the engineering, management or support of technical systems (systems comprising hardware/software/humans). It is a good opportunity to establish a shared view for customers and contractors (acquirer and supplier) project teams as well as for different departments within the organization.

Previous participants, numbering nearly 600, include representation from Bombardier, BAE Systems Bofors, BAE Systems Hägglunds, BMW, FMV, Novo Nordisk, Micronic Laser Systems, Norwegian Defence, Kongsberg A&D, Nokia, Saab Aerostructures/Aerotech/Avitronics/Bofors Dynamics/Microwave Systems/Systems/Training Systems/Underwater Systems, Siemens, SJ, Solvina, TetraPak, TVO, Vattenfall and the Volvo Group.

Summer School students, Utö, 2011

Systems Engineering Fundamentals

Summer School Instructors

Dr. Dinesh Verma
Dean and Professor, School of Systems and Enterprises Stevens Institute of Technology, USA

Mr. Tom Strandberg
Technical Director and Senior Consultant, Syntell AB, Sweden

Target Group

This course is aimed at anybody involved in the procurement, engineering, management or support of technical systems (systems comprising hardware/software/ humans). It is a good opportunity to establish a shared view for customers and contractors (acquirer and supplier) project teams as well as for different departments within the organization

Previous knowledge

No formal knowledge in systems engineering is needed. However, a few years practical experience in the field of complex technical systems is recommended to have gained an insight to the need for thinking and acting in terms of systems.

Personal Development Units

This course allows you to apply for 30 PDU:s according to INCOSE:s Certified Systems Engineering Professional (CSEP) program.

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
08.00		Structure of a Problem Solving Process	From Stake-holder to System Requirements	System Architecture principles	System Life Cycle Analysis	Presentation of case studies/ SRR
09.00						
10.00		Break				
11.00		System Operational Effectiveness	Use Case Scenario Development	System Architecture principles	System Safety Considerations	Presentation of case studies/ SRR
12.00		Lunch	Lunch	Lunch	Lunch	Lunch
13.00						
14.00		Development of Case Study	Development of Case Study	Development of Case Study	Development of Case Study	Q+A session
15.00	Introduction	Break				Evaluation
16.00	Introduction to System Con-cepts & Terms	Needs Analysis & Requirements Definition	Requirement Categories, Characteristics	System Life Cycle Analysis	Risk Analysis and risk Management	
17.00						
18.00	Welcome Reception and Dinner	Dinner	Dinner	Dinner	Social Event	
19.00		Evening Session- Tool Introduction and Case Study	Development of Case Study	Development of Case Study		
20.00						
21.00						
22.00						

Preliminary Program for Scandinavian Summer School on Systems Engineering Fundamentals [SYN26001000]

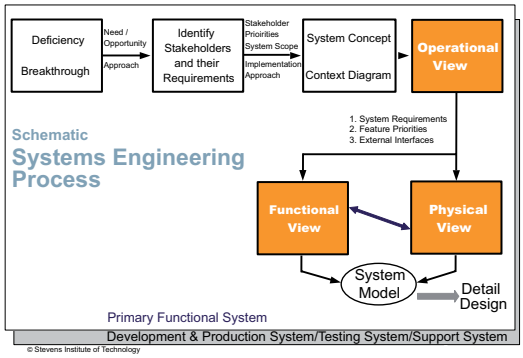
About the course

Imagine what perfect systems we could develop if we could understand and manage the complete picture! But think of the complexity we would have to handle! Systems Engineering is a method that helps you master the complexity and see the forest for the trees.

The Summer School on Systems Engineering Fundamentals discusses fundamental concepts and processes of systems engineering, along with applicable methods and tools. Initial focus is on need identification and problem definition. Thereafter, synthesis, analysis, and evaluation activities during concept and preliminary system design phases are discussed and articulated through examples and case study projects.

Emphasis will be on enhancing the effectiveness of deployed systems, while concurrently reducing their operational and support costs. Accordingly, course participants will be introduced to adapted and new engineering methods to impact design from a life cycle perspective early in the process, during need analysis and system architecture formulation. The School will focus on both system design "causes" and system operational/ support "effects".

Specific topics include: Concept of Operation, System and Product Design and Development; System Integration; System Architecture; Life Cycle Analysis. The course finishes with a simulated System Requirements Review (SRR) in which the students present their case studies.



» The amount of skills received during these 6 days should have required a semester at university. «

Model-based Systems Engineering

Summer School Head instructor:

Dr. Jonas Andersson, CSEP

Director Syntell Training

Syntell AB, Sweden

Target Group

This course is aimed at anybody involved in the development or procurement of systems that wishes to use graphical modelling techniques in the systems engineering process. The course is a good opportunity to establish a shared view for customers and contractors (acquirer and supplier) project teams as well as for different departments within an organization.

Previous knowledge

Some previous education in systems engineering is beneficial, e.g. Syntell Training's Summer School in Systems Engineering Fundamentals or similar together with a few years practical experience in the field of complex technical systems. Although no previous experience in tool-based modelling is required, some previous experience will enhance the course experience. Course language is English but the lecturers are fluent in Swedish.

Personal Development Units

This course allows you to apply for 30 PDU:s according to INCOSE:s Certified Systems Engineering Professional (CSEP) program.

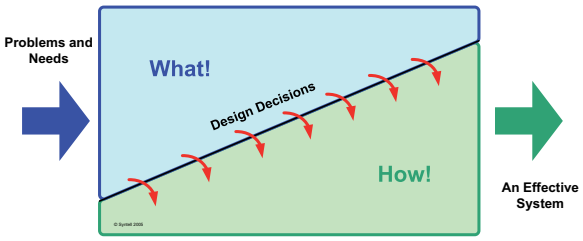
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
08.00						
09.00		Introduction to MBSE II	Modeling requirements	Modeling functions	Architecture frameworks	Student PDR
10.00		Break				
11.00		Models in Systems Engineering	Modeling requirements	Modeling behaviour	Guest: An example of Industrial MBSE	Student PDR
12.00		Lunch	Lunch	Lunch	Lunch	Lunch
13.00						
14.00		Conceptual analysis	Modeling Functions	Modeling behaviour	Guest: An example of Industrial MBSE	Closing Session
15.00	Introduction to Model Based Systems Engineering (MBSE) I	Break				
16.00		Conceptual analysis exercise	Planning and speciality engineering	Architectural assessment	Development of Case Study	
17.00						
18.00	Welcome Reception and Dinner	Dinner	Dinner	Dinner	Social Event	
19.00		Development of Case Study (Tool introduction)	Development of Case Study	Development of Case Study		
20.00						
21.00						
22.00						

Preliminary Program for Scandinavian Summer School on Model Based Systems Engineering [SYN26521000]

About the course

The Summer School on Model-based Systems Engineering discusses the fundamentals of using models for designing complex technical systems. Descriptive techniques used include SysML but several other common modelling techniques frequently used in Systems Engineering are also addressed. A central theme in the course is how to make explicit and how to document design decisions in the Systems Engineering (SE) process. The course further stresses the architecture as the information holder for conveying information among stakeholders as well as a prerequisite for structured analysis of complex systems. Planning and the integration of speciality engineering areas such as Logistics Engineering are discussed in the context of a model based SE effort.

Specific topics include: How to work model based, Conceptual analysis, Model based description techniques, Modelling requirements, Functional decomposition and analysis, Modelling and analysis of system behaviour, Architectural assessment and Speciality integration.



Throughout the week, the students develop their skills in making design decisions and documenting these by working their way through a fictive design project. The course ends with a simulated Preliminary Design Review (PDR) in which the students present their project assignments.

» ..It totally changed my way to look at how system architecture shall be carried out! Absolutely brilliant! «

» The lecturers well met my expectations and more! Best lecturers I have ever had I think! «

Logistics Engineering and Management

Summer School Instructors:

Mr. Stuart Allison
Principal Consultant ILS
Syntell AB, Sweden

Mr. Mike Cost
Principal Consultant ILS
Syntell UK Ltd

Dr. David M Moore
Cranfield University, UK

Target group

Anyone involved in acquisition projects and programmes, both from a supply or customer perspective, who require an overview of Support Solution Development in a Through Life context. Particularly those involved in individual ILS/Support disciplines looking to take on a management role or requiring a better understanding of their role within the overall Through Life Support Solution Environment.

Previous knowledge

A basic understanding of the English Language and some knowledge of system design and support issues within your own organization.

Personal Development Units

This course allows you to apply for 30 PDU:s according to INCOSE:s Certified Systems Engineering Professional (CSEP) program.

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
08.00		Why and what is ILS?	How do we apply ILS -Part 3	Acquirer & Supplier relationship	ILS Mgmt, Reqmts, Tools & Methods	International trends in ILS
09.00						
10.00		Break				
11.00		How do we apply ILS-Part 1	How do we apply ILS-Part 4	Through Life Management	Obscolence Mgmt & Software Sp	Pres. of Case Study/Guidance conference
12.00		Lunch	Lunch	Lunch	Lunch	Lunch
13.00						
14.00		How do we apply ILS -Part 2	Development of Case Study	Development of Case Study	Dr David Moore; UK Acquisition reforms and ILS	Q+A Session
15.00	Introduction	Break				Evaluation and closure
16.00	A holistic view on logistics engineering	Development of Case Study	Maintenance & LSA	Contracting & planning for ILS	Development of Case Study	
17.00						
18.00	Welcome Reception and Dinner	Dinner	Dinner	Dinner	Social Event	
19.00		Development of Case Study	Development of Case Study	Development of Case Study		
20.00						
21.00						
22.00						

Preliminary Program for Scandinvian Summer School on Logistics Engineeing and Management [SYN36021000]

About the course

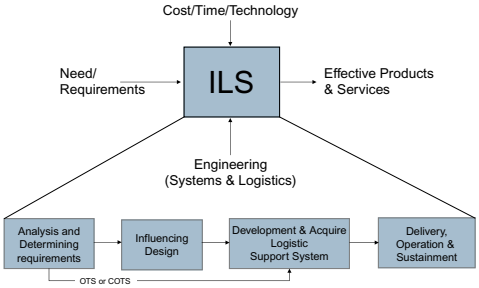
The Summer School on Logistics Engineering and Management provides insight into the through life management of systems from inception to retirement. It covers Logistics Engineering methods and tools and how supportability is addressed, analyzed and measured as a part of the Systems Engineering process. The management methodology covers aspects such as managing, contracting, planning and methods.

The course focuses on the Objectives of Integrated Logistics Support (ILS) and in particular the influence and optimization of system design from a support perspective. It also includes the relationships with other project disciplines and an insight into factors/issues that increasingly impact modern day procurements, such as the use of Commercial off The Shelf (COTS) technology, Obsolescence and Software Support.

International standards and initiatives such as UK Def Stan 00-60 and PLCS (Product Life Cycle Support) are discussed and evaluated. The relationship between acquirer and supplier is a central theme throughout the course. The course contains both theoretical and practical elements and ends with a simulated ILS Guidance Conference.

The aim of the course is to give a fundamental overview of Logistics Management and Engineering in an Acquisition Management context with particular emphasis on the Life-Cycle /Through Life approach to Support Solution Development and implementation.

Logistics Engineering and Management Model



» The best thing with the course was all the real world examples that made it so easy to relate theory to practical use. «

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About Utö and Stockholm Archipelago

Utö is located about 90 minutes southeast of Stockholm. The surroundings offer a relaxing atmosphere and scenery. For those more active there are plenty of sporting opportunities. Participants stay two by two in small cottages close to the class rooms and restaurant. More information will be sent to you upon registration.

Good to know information

For more information: Please contact Agneta Witt, tel +468 660 02 80 or training@syntell.se.

Time: The course starts at 15:00 on Sunday, August 19, 2012, and ends at 15:00 on Friday, August 24, 2012.

Transportation: There will be a chartered bus leaving from Stockholm City on Sunday, August 19, 2012, which will take us to the boat to Utö. More information upon registration.

Dress code: Informal. Bring a warm jacket for the evenings. Also, clothes to make use of Utö's sport and swimming facilities are recommended.

Weather: Expect 15-20 degrees Celsius.

Price

The course fee is SEK 30 995, which covers attendance; a full set of course materials and a course certificate. In addition, an accomodation fee of SEK 11 500 will apply, including lodging and full board (breakfast, lunch and dinner) as of dinner Sunday, through lunch Friday. Syntell will invoice after receipt of registration, and payment is due 10 days after invoice. All prices exclude VAT. For more information about prices, please contact Agneta Witt, tel +468 660 02 80 or training@syntell.se.

Early Bird discount

If you register before May 11, 2012, you get an early bird discount of 5% of the course fee!

Registration

Register for the Summer School Week courses on-line via www.syntell.se. Please note that we can host up to a maximum of 25 participants per Summer School course. For more information, see our web page www.syntell.se.
Last day for registration is June 21, 2012!

Conditions

Last day for registration is June 21, 2012. Please note that the registration is binding, but can be transferred to another person within the company. However, if participants must cancel for any reason, prior to May 11, no cancellation fee will apply. Thereafter but before June 21, half course fee will apply. Thereafter full fee will be charged. We reserve the right to cancel courses due to too few participants or events beyond our control. We also reserve the right to increase the price due to circumstances beyond our control.

Customer satisfaction guarantee

If you are not satisfied with the course you participate in, after agreement, we offer you participation in a similar course without any further cost. The guarantee is limited to those who fall into the course target group and have the required previous knowledge as indicated in the course description. To ensure that you get to the right course, we ask you to study the course description, target group and previous knowledge requirements carefully. Please contact us if you have questions about which course to choose. We will be happy to help you!

Syntell

Syntell AB is a leading Scandinavian provider of consulting and training, supporting clients in the design, acquisition, and life cycle management of complex systems.

STEVENS Institute of Technology

Founded in 1870 in Hoboken, NJ, Stevens is one of the leading technological universities in the USA. It offers bachelor's, master's and doctoral degrees.

For further information and registration:

www.syntell.se

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Syntell is a member of:

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