

Systems Thinking



ONLINE COURSE



CPD validation activity number: SAIIIE / CPD / P / 01 / 21 CPD points: 2 Points development category 1
Service provider: Alpha Concepts (Pty) Ltd registration number: SAIIIE / CPD Provider / 02 / 05 / 21



COHORT 1: 14-15 AUGUST 2021



COHORT 2: 24-25 NOVEMBER 2021

OVERVIEW

Systems thinking, from a soft system's perspective, is an approach to understanding the complexity which exists within all large organizations. Complexity arises as organizations try to solve problems or realize opportunities with multiple objectives, including the human dimension. Managers are faced with the dilemma of meeting potentially conflicting objectives of different stakeholders: as a result of - complexity and wicked or messy problems. These terms define a situation where more than one interacting problems arise.

System's thinking from a soft system's methodology includes the human activity system (HAS) early on in the analysis. Systems thinking is about how one balances the expectations of various stakeholders to achieve the required objectives, while at the same time making the system purposeful, i.e. a system that is self-regulating. This course is how one manager's complexity and uncertainty in unstructured environments and at the same type creating self-regulating systems, moving towards a learning organization.

NUMBER OF LEARNING UNITS:

3

COURSE BENEFITS

- Establish an understanding of basic systems and systems engineering concepts and terms.
- Understanding systems engineering as a process and its relationship to program management life cycles.
- Understand useful theories, models, techniques, and tools and how these concepts relate to Soft systems methodologies.
- Develop an understanding of chaos theory and how this leads to structured chaos.
- Develop and use systems thinking tools for strategy, operations excellence, innovation, continuous improvement, etc.

COURSE OUTCOMES

- Explain and understand the different systems perspectives and the interdisciplinary nature of systems engineering;
- Define, explain and understand system hierarchies, systems boundaries and system root definitions;
- Explore and use the different systems tools and techniques;
- Explain, understand and implement systems thinking approaches in the business environment;
- Evaluate the future of systems thinking and accesses its potential to realize business opportunities.

The course focuses on synthesis of management and scientific knowledge, providing participants the ability to critically gather data, interpret data and develop solutions to commercial ends. The course focuses on higher level thinking; participants are required to apply scientific knowledge, management knowledge and to develop creative and out of the box thinking approaches to systems management.

ABILITY DEVELOPMENT

The target audience is ECSA registered professional engineers, professional technologists and registered technician's. The course is applicable to all engineering disciplines.

All personnel involved in leadership positions who are faced with making decisions in complex environments. Typically personnel who are involved in change management, operations, innovation and process improvement. Some examples include personnel involved in IT, supply chain management, HR, engineering, business process management, etc. Typically personnel faced with complex decisions will benefit from this course.

TARGET AUDIENCE

COURSE OBJECTIVES

- To explore and establish an understanding of basic systems and systems engineering concepts and definitions.
- Obtain and understanding of the wider systems environment and its impact on systems in real world situations.
- Explore and understand the importance of the HAS (Human activity system) and how to overcome the challengers associated with the HAS
- Develop the ability to apply the concepts, and tools to real world business situations.

COURSE CONTENT AND SCHEDULE

DAY	SESSION	TIME SLOT	DESCRIPTION
ONE	One Learning activity 1	8:30 to 10:00	<ul style="list-style-type: none"> - Perspectives of systems and systems engineering - Systems definitions - Classification of systems and systems engineering models - Systems concepts
	COFFEE BREAK	10:00 to 10:30	COFFEE BREAK
	Two Learning activity 2	10:30 to 12:00	<ul style="list-style-type: none"> - Systems hierarchies, boundaries and root definitions - Systems tools and techniques
	COFFEE BREAK	12:00 to 12:15	COFFEE BREAK
	Three Learning activity 3	12:15 to 13:00	Management and planning tools
	LUNCH	13:00 to 13:45	LUNCH
	Four Learning activity 3	13:45 to 15:45	<ul style="list-style-type: none"> - Management and planning tools - Rich picture tools
	Five Learning activity 3	15:45 to 16:15	<ul style="list-style-type: none"> - Management and planning tools - Rich picture tools and a selection of alternative tools
TWO	One Learning activity 3	8:30 to 10:00	Working group design challenge case study
	COFFEE BREAK	10:00 to 10:30	COFFEE BREAK
	Two Learning activity 3	10:30 to 12:00	Working group design challenge
	COFFEE BREAK	12:00 to 12:15	COFFEE BREAK
	Three Learning activity 3	12:15 to 13:00	Working group design challenge
	LUNCH	13:00 to 13:45	LUNCH
	Four Learning activity 3	13:45 to 15:45	Typical applications of systems engineering
	Five Learning activity 3	15:45 to 16:15	Review and closure

OTHER REQUIREMENTS

NQF Level 8

Admission: Appropriate tertiary qualification & 5 years relevant work experience



COURSE INSTRUCTOR

Prof. Raj Siriram is Chief executive of Alpha concepts Pty (Ltd) a professional management and engineering consulting company, previously Operations executive at Plessey a Dimension Data company, Chief Information Officer at Dimension Data Middle East and Africa. He was also Divisional managing director at Siemens Ltd, Manufacturing systems manager at GE, and Manufacturing manager at Alstom. He has a wide range of industrial experience from business development, project management, information technology, supply chain management, performance management, business engineering, project management and manufacturing. Raj has more than 15 years experience at executive level. He is also a senior lecturer at the University of the Witwatersrand, he was also an adjunct professor at the University of Witwatersrand. He is also currently an extraordinary associate professor at North-West University. His research interests are in technology management, enterprise engineering, project management and systems engineering. Raj is registered with the engineering council of South Africa. He holds a Ph.D. in Industrial Engineering from the University of Witwatersrand, In South Africa, School of Mechanical, Industrial and Aeronautical Engineering. He is also a fellow member of the Institute of Directors, and fellow member of South African Institute of Industrial Engineers.

COURSE REGISTRATION FORM

COURSE NAME		COURSE DATE	
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- Please complete one form per delegate.
- Please complete all details on the forms below in clear block letters.
- Please ensure you send the relevant attachments so as not to delay your registration.
- Only fully completed registration forms can be processed all fields must be completed.

NAME	
ID NUMBER	
COMPANY	
COMPANY VAT NUMBER	
POSTAL ADDRESS	
POSITION IN COMPANY	
CELL NUMBER	
OFFICE NUMBER	
FAX NUMBER	
EMAIL ADDRESS	

ECSA REGISTRATION NUMBER	
COMPANY ORDER NUMBER	
PERSON PAYING ACCOUNT	
PERSON EMAIL	
PERSON CONTACT NUMBER	

PLEASE NOTE THAT ELECTRONIC INVOICES ARE SENT AS A FORM

Banking details & pro forma invoices will be send on receipt of completed registration form. Payment must be received before course start.

SIGN ACCEPTANCE		DATE SIGNED	
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SPECIAL DIETARY REQUIREMENTS?	
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I was contacted via E-mail/Phone	
I was contact by (Name & Surname)	
I Phoned Alpha Concepts to book	

PAYMENT TERMS PER COURSE = 1x LOG-IN

This discounted price is available only when you register and pay within 7 days of booking. Immediate payment is required, if you register at any time within 10 business days prior to the start of the training course.

R5 200 + 15% VAT

This price is applicable if issuing an official PO, or your payment is made no later than 30 days after the service has been rendered.

R7 200 + 15% VAT

POLICIES, TERMS AND CONDITIONS

As the authorising signature you will be deemed to have read and accepted on behalf of the stated company the policies, terms and conditions of Alpha Concepts (Pty) Ltd as stated herein.

Registration fees and payment dates:

- On receipt of your registration, you will receive a VAT invoice and a booking confirmation email.
- The registration fee for the online training course covers all written materials.
- Please note payment is due by the stipulated date on the invoice in order for the log-in-details to be sent to you.

Live online participation:

- You will only be provided 1x log-in link per course participant that is registered and paid for.
- You may not share your log-in link with anyone for the use of providing them with additional and unpaid for access to the online training course.
- Payment for any additional course participants found on the online training course will be invoiced and they will be blocked from online training course until such time as full payment is received.
- Alpha Concepts (Pty) Ltd cannot be held responsible for any connectivity issues you may experience and can't guarantee the quality of your connection.
- Any hardware or connection peripherals are the responsibility of the course participant this includes a stable internet connection as well as camera and microphone to participate in the online training courses.
- Alpha Concepts (Pty) Ltd is also not responsible for any costs you may incur in participating in the online training course or data costs.
- Recordings of the online sessions are not made available under any circumstances.

Course cancellation conditions:

Please note all course participant cancellations must be received in writing and are subject to the following conditions:

- You may cancel your registration 10 business days before the online training course takes place.
- For any cancellations received less than 10 business days before the online training course takes place, the full fee is payable and no credit notes or refunds will be given.
- No refunds or credit notes will be given to course participants who do not cancel or fail to attend the online training course under any circumstances.
- Please note that if you do not cancel and/or fail to attend for any reason, you are still responsible and liable for the full payment. This clause is also applicable if we have received your signed registration form, invoiced you and are still awaiting full payment or a PO. Failure to pay or to provide an official PO does not constitute a cancellation.

Copyright

Please note all course material is for the sole purposes of the online course training courses and may not be copied or distributed to any other party nor be sold for commercial ends. The intended use is solely for the registered course participants.

NOTICE:

We reserve the right to change the date, location, course instructor or delivery method and if necessary cancel, postpone or reschedule the training course without notice, however we will undertake to advise all course participants of any changes in writing as soon as possible. In the unlikely event that we cancel, postpone or reschedule the training course for any reason we will automatically give you a 100% credit note to the value of the funds received which can be used over the next 12 months only and we hereby disclaim any further liability. Course participants can also request a full refund in the unlikely event that we cancel, postpone or reschedule the training course.



Dr. Raj Siriram Chief Executive Alpha Concepts (Pty) Ltd.

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