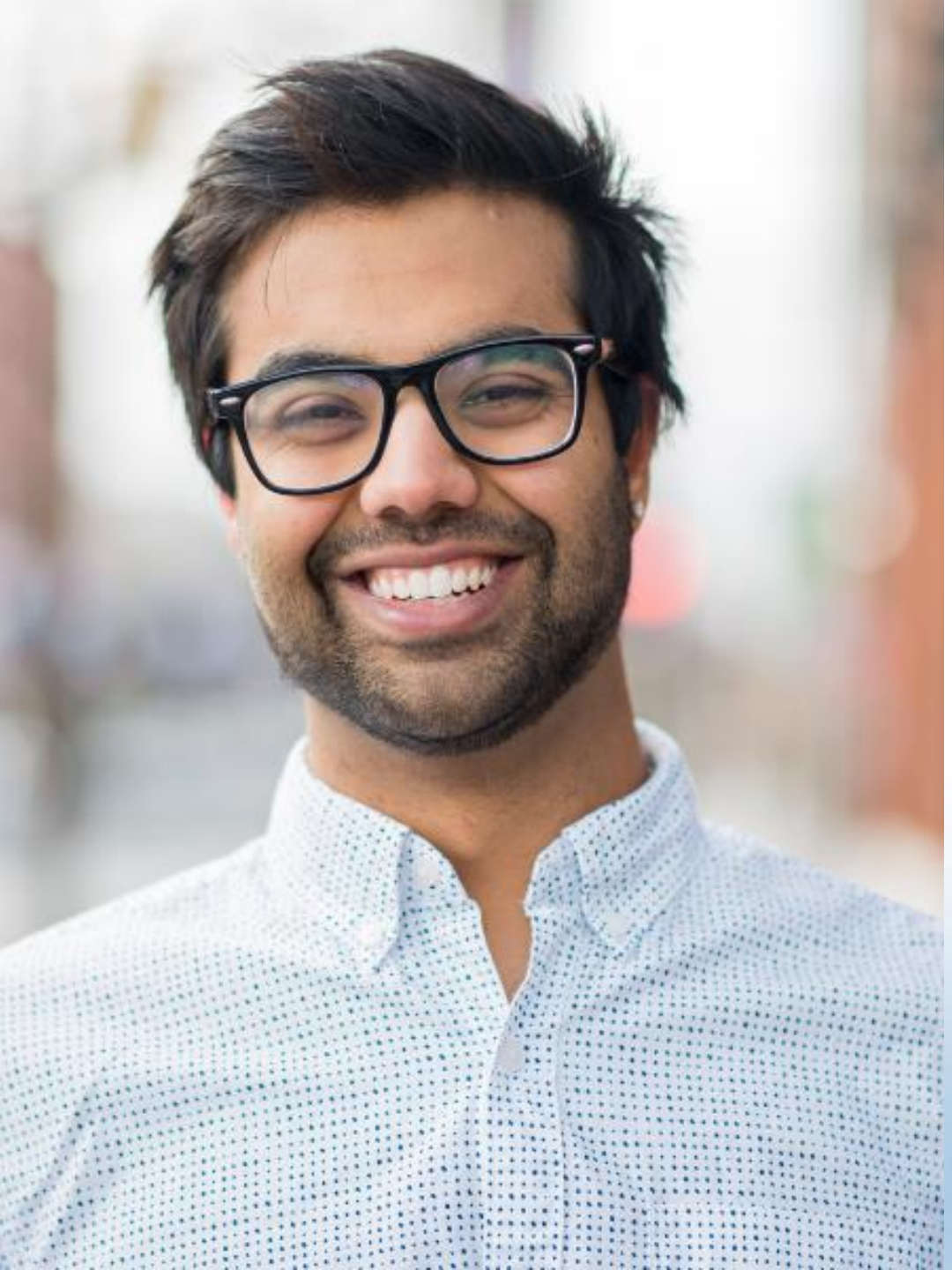
Systems Thinking Alliance

SYSTEMS THINKING ALLIANCE:

Unleashing the Power of Systems Thinking



Course Outline

Certified Systems Thinking Associate (CSTA)

Copyright Notice

All content provided herein are protected by copyright laws and international treaties. The content, including but not limited to text, graphics, images, videos, and audio, is the exclusive property of Systems Thinking Alliance Inc.

Authorized Use: You are granted a limited, non-transferable license to access and use the course materials for personal or educational purposes only. This license does not permit you to modify, reproduce, distribute, publicly display, or create derivative works from the materials without prior written consent from Systems Thinking Alliance Inc.

Prohibited Activities: Unauthorized duplication, distribution, or public display of the course materials, in whole or in part, is strictly prohibited. Any unauthorized use may violate copyright laws and could result in civil and/or criminal penalties. Consequences of Copyright Infringement: Engaging in copyright infringement may result in legal action and monetary damages. In addition, individuals found to have infringed upon copyright may be held personally liable for any resulting losses, including legal fees.

Intellectual Property Rights: All intellectual property rights relating to the course outline remain with Systems Thinking Alliance Inc. No transfer of ownership or intellectual property rights is granted or implied under this copyright notice.

Contact Information: For inquiries regarding the authorized use of the course materials or requests for permission to use the materials beyond the scope of this license, please contact Systems Thinking Alliance Inc. at contactus@systemsthinkingalliance.org

By accessing and using these materials, you acknowledge and agree to abide by the terms and conditions set forth in this copyright notice.

Systems Thinking Alliance - Certification Landscape

Certified Systems Thinking **Associate** (CSTA)

Systems Concepts

Emergence
Recursion
Hard & Soft Systems
Hierarchy
Patterns
Purpose
Systematic vs. Systemic
Boundary
Structural Coupling
Structure
Autopoiesis
Modelling
Feedback & Loops
Requisite Variety
Systemic Metaphor
Relationship
Leverage Points
Mapping Techniques
Holism
Black box
Self-organization
Network
Multiple Perspectives

Systems Approaches

System of Systems Methodologies
Viable System Mode (VSM)
Systems Leadership
Strategic Assumption Surfacing and Testing (SAST)
System Dynamics (SD)
Critical Systems Heuristics (CSH)
Soft Systems Methodology (SSM)
Socio-Technical Systems Thinking (STS)
Interactive Planning (IP)
Chaos Theory
Critical Systems Thinking (CST)
Cynefin Framework
Systemic Tools
Facilitation

Certified Systems Thinking **Practitioner** (CSTP)

Certified Systems Thinking Associate (CSTA) - Learning objectives

#	Module	Learning Objective	Topics Covered
1	Understanding the big picture: systems Thinking for today's challenge	• Identify complex challenges and comprehend how systems thinking can provide viable, sustainable interventions • Recognized the VUCA (volatile, uncertain, complex, and ambiguous) characteristics • Differentiate wicked problems from puzzle or tame problems. • Identify the characteristics of wicked problems and discuss the challenges that come when dealing with them • Comprehend the obstacles that decision-makers encounter when handling complexity and wicked problems, such as interconnected elements, instability, and a variety of viewpoints	• Where systems thinking can help? • VUCA world • Dichotomy of problems • What are wicked problems? • Understanding wicked problem
2	Brief history of systems Thinking	• Summarize the key milestones and major contributors in the history of systems thinking and demonstrate an understanding of its evolution and impact. • Understand the basics of General Systems Theory (GST), Cybernetics, and Complexity Theory and identify their roles in understanding and analyzing complex systems. • Understand Boulding's pathways for advancing GST, comprehend his preference for hierarchical organization, recognize the nine levels of discourse, and grasp how increasing complexity leads to the emergence of new properties	• Brief history of systems thinking • Systems thinkers • Development of systems approaches • General Systems Theory (GST) • Two pathways of General Systems Theory (GST) • Hierarchy of complexity • Nine levels of Boulding's hierarchy • Cybernetics • Complexity Theory

Certified Systems Thinking Associate (CSTA) - Learning objectives

#	Module	Learning Objective	Topics Covered
3	**Complexity**	• Understand the classification and explain 'organized simplicity,' 'organized complexity,' and 'unorganized complexity.' • Understand the effect of randomness on complexity and explain the relationship between complexity and number of elements. • Explain why classical mathematical tools work for simple problems and why statistics/probability are effective for unorganized complexity. • Recognize the situations where systems thinking is most useful and appropriate. • Analyze and understand the various factors contributing to system complexity, including interconnectivity, multiple causes, environmental turbulence, randomness, emergent properties, non-linear relationships, and the role of conflict and power.	• Science and complexity • Distinction between organized simplicity, organized complexity and unorganized complexity • Regions of systems • Complexity and randomness • Examining complexity
4	**Systems**	• Analyze and articulate how the concept of systems is applicable across different scopes and complexities in our universe. • Apply a systems lens perspective to identify, explain, and evaluate various systems • Define key characteristics of a system and demonstrate their understanding of a system by analyzing a real-world example • Distinguish between processes and systems by defining their key characteristics, understanding their different goals and representations, and explaining how processes link together within a system • Define and differentiate between open systems and closed systems	• Systems are everywhere • Systems lens • Characteristics of a system • Process vs. system • Open and closed systems

Certified Systems Thinking Associate (CSTA) - Learning objectives

#	Module	Learning Objective	Topics Covered
5	**Systems Thinking**	• Gain an understanding that systems thinking is transdisciplinary, aiming to comprehend complex situations through its core concepts and that various approaches are available for systemic interventions. • Explain and differentiate what systems thinking is and is not • Compare and contrast systematic and systemic thinking • Differentiate between open and closed systems, explain the importance of interactions with the environment in open systems, and analyze how feedback loops contribute to the adaptability and complexity of open systems • Distinguish between hard and soft systems thinking by comparing their orientations, assumptions about the world, views on systems models, and language used for discussion.	• What is systems thinking • What systems thinking is and is not • Systematic vs systemic thinking • Open and closed systems • Hard and Soft systems thinking compared
6	**Core Systems Concepts**	• Define key concepts in the field of systems thinking and demonstrate an understanding of their significance and practical implications.	• Relating • Emergence • Modelling • Hierarchy • Holistic thinking • Structure • Recursion/fractal • Boundary • Multiple perspectives • Block box • Requisite variety

Certified Systems Thinking Associate (CSTA) - Learning objectives

#	Module	Learning Objective	Topics Covered
6	**Core Systems Concepts (cont.)**	• (cont.) Define key concepts in the field of systems thinking and demonstrate an understanding of their significance and practical implications.	• Patterns • Feedback • Homeostasis • Autopoiesis • Structural coupling • Network
7	**Systemic Perspectives**	• Understand the power of metaphors in shaping perspectives and identify how the use of diverse metaphors can influence actions and lead to a more comprehensive understanding of complex systems and issues. • Distinguish between mindless, uni-minded, and multi-minded systems, understanding their distinct operational characteristics, performance criteria, and ways of reacting to environments within organizations. • Define the five systemic perspectives (machine, organism, cultural/political, societal/environmental (purposeful), and interrelationships) and describe how each perspective provides a unique approach to understanding and addressing complex problems.	• Metaphors • Shift of paradigm • Five systemic perspectives • Machine • Organism • Cultural/political (purposeful) • Societal/environmental • Interrelationship

Certified Systems Thinking Associate (CSTA) - Learning objectives

#	Module	Learning Objective	Topics Covered
8	**Purpose**	• Distinguish between 'Purposeful' and 'Purposive' systems, understand their characteristics, and recognize how individual and system agencies interact to shape each other.	• Purposeful and purposive
9	**Systems Mapping /Modelling Techniques**	• Evaluate the purpose, utility, strengths, and limitations of some key system mapping/diagramming techniques by interpreting and analyzing them to represent different aspects of a system.	• Systems maps • Spray Influence Diagram • Concepts maps • Rich pictures • Causal loop diagrams (CLD) • Connection circles • Stock and flow diagrams
10	**Exam Details**	• Understand the exam structure, grasp the percentage allocation of questions per module, and gain valuable tips and techniques for achieving success in the examination.	• Exam details • Percentage allocation per module • Exam tips and tricks • Access to exam
11	**Systems Thinking Approaches (optional)**	• Define the purpose of key system thinking approaches and identify their underlying systemic perspective.	• System Dynamics (SD) • Viable System Model (VSM) • Soft Systems Methodology (SSM) • Interactive Planning • Critical Systems Heuristics (CSH)

Systems Thinking Alliance

About Systems Thinking Alliance

Systems Thinking Alliance is a global organization supporting practitioners and organizations who explore and apply systems thinking principles, practices and methods to make the world humane and sustainable.

Our mission at Systems Thinking Alliance is to empower organizations through expert training, coaching and consulting, enabling them to navigate complex challenges effectively.

Our vision is a future where systems thinking is universally embraced, fostering a culture of continuous learning and community engagement. We aspire to empower organizations globally, transforming chaos into order, and effectively tackling challenges through the lens of systems thinking.

Register for CSTA Class

Systems Thinking Alliance

systemsthinkingalliance.org