CONCEPT

Systems Thinking and Complexity: Causal Loop Diagrams, Archetypes and Leverage Points

22 – 26 February 2027
London - Central London four-star



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Ref: 709_19043 **Date:** 22 – 26 February 2027 **Location:** London - Central London four-star **Fees:** 23000 SAR

Introduction:

Systems thinking and complexity methods explain why well-intended fixes in organisations and public policy so often return the same problem months later: backlogs regrow, shortages reappear and service demand rebounds. The cause is rarely effort; it is hidden feedback, accumulations and delays that linear cause-and-effect analysis misses. This Core Concept course trains managers and policy staff to map feedback loops, stocks and flows and recurring archetypes, locate leverage points and run group model building sessions. Participants produce a Causal Map and Intervention Strategy for a case organisational or policy problem.

Course Objectives:

- Distinguish linear from feedback-based explanations of a recurring problem and set a system boundary with stakeholders' mental models made explicit
- Draw causal loop diagrams with correct link polarity, labelled reinforcing and balancing loops and marked delays
- Convert a causal map into a stock and flow sketch that explains accumulations, drains and behaviour over time
- Recognise system archetypes such as fixes that fail, shifting the burden, limits to growth and tragedy of the commons in live organisational and policy cases
- Rank candidate interventions against the leverage point hierarchy and choose probe-based or analytical responses for complex versus complicated problems
- Facilitate a group model building session and assemble a Causal Map and Intervention Strategy for a case problem

Target Audience:

- Managers accountable for recurring operational or service problems that resist conventional fixes
- Policy analysts who design, appraise or evaluate public programmes with many interacting actors
- Strategy and planning staff who model how organisational decisions ripple across units over time
- Sustainability and environmental managers responsible for resource use, waste and shared-resource issues
- Transformation and improvement leads who facilitate cross-functional problem-structuring workshops

Course Outline:

Day 1: From Linear Cause-and-Effect to Feedback Thinking

- Event, Pattern, Structure and Mental Model Iceberg
- Behaviour-Over-Time Graphs for a Recurring Problem
- System Boundary Critique and Boundary Categories
- Mental Model Elicitation with Ladder of Inference Interviews
- Stakeholder and Actor Map for a Problem Situation

Day 2: Causal Loop Diagrams, Stocks, Flows and Delays

- Causal Link Polarity and Variable Naming Conventions
- Reinforcing and Balancing Loop Identification and Labelling
- Delay Marking and Oscillation Patterns in Feedback Loops
- Stock and Flow Notation: Accumulations, Inflows and Outflows
- Bathtub Dynamics and Reference Mode Sketching

Day 3: System Archetypes and Leverage Points in Practice

- Fixes That Fail and Shifting the Burden Archetype Templates
- Limits to Growth and Capacity Constraint Archetype Templates
- Tragedy of the Commons, Escalation and Success to the Successful Archetypes
- Meadows' Twelve Leverage Points Hierarchy
- Intervention Ranking Matrix by Leverage and Side Effects

Day 4: Complexity, Sense-Making and Policy Challenges

- Complex Versus Complicated Problem Domains and Response Patterns
- Safe-to-Fail Probe Portfolio Design for Complex Problems
- Wicked Problem Framing for Sustainability and Resource Use
- Unintended Consequence Scan for Policy Options
- Group Model Building Scripts, Roles and Facilitation Plan

Day 5: Case Study: Causal Map and Intervention Strategy

- Case Brief: Persistent Organisational or Policy Problem Profiling
- Group Model Building Session Run on the Case Problem
- Causal Map Build with Loops, Stocks and Archetype Overlay
- Leverage-Based Intervention Strategy and Monitoring Indicators
- Causal Map and Intervention Strategy Presentation and Peer Challenge

Skills You Will Gain:

- Feedback Loop Mapping
- Stock and Flow Sketching
- Archetype Recognition
- Leverage Point Analysis
- Boundary Critique
- Complexity Sense-Making
- Group Model Building Facilitation
- Unintended Consequence Assessment

Why Attend This Course:

- Return with a Causal Map and Intervention Strategy for a case problem, tested by peers
- Stop funding quick fixes that feed the very problem they target by spotting archetypes early
- Run structured modelling workshops that turn conflicting stakeholder views into one shared causal picture
- Compare recurring problems and interventions with managers and policy staff from other sectors and countries

Conclusion:

Persistent problems are usually produced by the structure of the system that surrounds them, so lasting change comes from redesigning feedback, flows and rules rather than pushing harder on symptoms. The week moves from boundaries and mental models, through causal loop diagrams, stocks, flows and delays, to archetypes, leverage points, complexity and group model building. On the final day each participant builds a Causal Map and Intervention Strategy for a case problem, ready to brief colleagues and sponsors on where to intervene and what to monitor.