



FREE Lean Six Sigma + AI Webinar Series

52-Session Curriculum | DMAIC Framework

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About This Series: One session per week for a full year. Each session teaches one Lean Six Sigma tool or concept through hands-on, AI-assisted data analysis — using ChatGPT, Gemini, Claude, and Manus. Industries rotate across Manufacturing, Healthcare, and Service/Office to keep content broadly applicable.

Phase summary: Phase 0 (4 sessions) · Phase 1 (8 sessions) · Phase 2 (10 sessions) · Phase 3 (12 sessions) · Phase 4 (10 sessions) · Phase 5 (8 sessions) = **52 sessions total**

Phase 0: Foundations & Overview			
#	Session Title / LSS Tool	Industry	What You Will Learn
01	Session 01: LSS + AI Overview	Cross-industry	What is Lean Six Sigma? A plain-language overview of DMAIC, the eight wastes, and variation — plus a live demo of how ChatGPT, Gemini, Claude, and Manus each respond to the same LSS question.
02	Session 02: Voice of the Customer (VOC)	Healthcare	Why every improvement project starts with the customer. Learn how to collect, sort, and prioritize customer feedback — and use AI to synthesise open-ended survey responses in seconds.
03	Session 03: Process Thinking	Manufacturing	Inputs, outputs, controls, and variation — the mental model that underpins all of LSS. Use AI to map a simple process narrative into a structured SIPOC table automatically.
04	Session 04: AI Tools Orientation	Service / Office	Side-by-side comparison of ChatGPT, Gemini, Claude, and Manus for data analysis tasks. Understand each tool's strengths, limitations, and best use cases for LSS practitioners.





Phase 1: Define			
#	Session Title / LSS Tool	Industry	What You Will Learn
05	Session 05: Project Charter	Manufacturing	The contract that aligns your team and sponsors. Learn to write a tight charter with a clear problem statement, goal, scope, and business case — and use AI to draft and stress-test each section.
06	Session 06: SIPOC Diagram	Healthcare	Map a process at 30,000 feet — Suppliers, Inputs, Process, Outputs, Customers. Use AI to turn a rough process description into a structured SIPOC in one prompt.
07	Session 07: VOC Deep Dive	Service / Office	Go beyond basic surveys: affinity diagrams, focus groups, and complaint log mining. Use AI to cluster hundreds of open-ended comments into actionable themes instantly.
08	Session 08: Critical to Quality (CTQ) Trees	Manufacturing	Translate fuzzy customer wants into precise, measurable quality requirements. Use AI to build the driver-to-CTQ chain and suggest metrics for each branch.
09	Session 09: Kano Model	Healthcare	Categorise features into Must-Haves, Delighters, and Satisfiers to focus effort where it matters most. Use AI to score survey data and plot a Kano grid.
10	Session 10: Stakeholder Analysis	Service / Office	Identify who can help or hinder your project — and plan your communication strategy. Use AI to draft tailored stakeholder messages and resistance-management plans.
11	Session 11: Problem & Goal Statements	Manufacturing	Write problem statements with a Who-What-Where-When-How much structure and SMART goal statements. Use AI to critique drafts and sharpen language.
12	Session 12: RACI Matrix	Healthcare	Clarify who is Responsible, Accountable, Consulted, and Informed for every project task. Use AI to generate a first-pass RACI from a project charter.





Phase 2: Measure			
#	Session Title / LSS Tool	Industry	What You Will Learn
13	Session 13: Process Mapping	Service / Office	Detailed flowcharts and swim-lane diagrams that expose hand-offs, delays, and rework loops. Use AI to convert a narrative process description into a structured flowchart outline.
14	Session 14: Data Types & Scales	Manufacturing	Continuous vs. discrete, nominal vs. ordinal — choosing the right data type drives every downstream statistical decision. Use AI to classify a data dictionary and recommend appropriate charts.
15	Session 15: Measurement System Analysis (Gauge R&R)	Manufacturing	Verify your measurement system before trusting the data. Walk through a crossed Gauge R&R study and use AI to interpret %Study Variation and the number of distinct categories.
16	Session 16: Process Capability (Cp & Cpk)	Healthcare	Quantify how well a process meets specification limits. Calculate Cp, Cpk, and Pp, Ppk — and use AI to explain capability results and suggest next steps.
17	Session 17: Baseline Data Collection	Service / Office	Design a sampling plan that gives you statistically valid data without breaking the budget. Use AI to recommend sample sizes and data collection sheet designs.
18	Session 18: Run Charts	Manufacturing	Detect trends, shifts, and oscillations over time before introducing formal control charts. Use AI to identify non-random patterns in a run chart data series.
19	Session 19: Pareto Analysis	Healthcare	Apply the 80/20 rule to focus on the vital few causes. Build a Pareto chart from defect data and use AI to interpret cumulative impact and prioritise action.
20	Session 20: Histograms & Distributions	Service / Office	Visualise data shape, spread, and skewness. Identify normal vs. non-normal distributions and use AI to recommend the right probability model and next analytical steps.
21	Session 21: DPMO & Sigma Level	Manufacturing	Calculate Defects Per Million Opportunities and convert to a sigma score. Use AI to compute DPMO from raw defect data and benchmark against industry baselines.
22	Session 22: Control Charts — Introduction	Healthcare	Build I-MR and Xbar-R charts to distinguish common cause from special cause variation. Use AI to select the right chart type and flag rule violations automatically.





Phase 3: Analyze			
#	Session Title / LSS Tool	Industry	What You Will Learn
23	Session 23: Fishbone (Ishikawa) Diagram	Manufacturing	Structured brainstorming to surface all potential causes under 6 M categories. Use AI to generate a populated fishbone from a problem statement and refine with team input.
24	Session 24: 5 Whys	Healthcare	Drill through layers of symptoms to reach the true root cause. Use AI to facilitate a 5 Whys chain, challenge shallow answers, and check for cause-effect logic.
25	Session 25: FMEA	Service / Office	Assess every failure mode by Severity, Occurrence, and Detection to compute a Risk Priority Number. Use AI to draft an initial FMEA table and suggest detection controls.
26	Session 26: Hypothesis Testing	Manufacturing	Introduction to null and alternative hypotheses, p-values, and significance levels. Use AI to select the right test for your data type and interpret results in plain language.
27	Session 27: Correlation Analysis	Healthcare	Measure the strength and direction of relationships between variables using scatter plots and Pearson/Spearman coefficients. Use AI to summarise correlation matrices and flag spurious relationships.
28	Session 28: Regression Analysis	Service / Office	Build predictive models that quantify how X variables drive the Y outcome. Use AI to interpret regression output, check assumptions, and communicate findings to non-statisticians.
29	Session 29: Chi-Square Test	Manufacturing	Test for independence between categorical variables — e.g., defect type vs. shift. Use AI to set up contingency tables, compute expected counts, and interpret Chi-square results.
30	Session 30: ANOVA	Healthcare	Compare means across three or more groups to identify significant differences. Use AI to walk through one-way ANOVA results, post-hoc tests, and practical significance.
31	Session 31: Multi-Vari Studies	Service / Office	Partition variation across positional, cyclical, and temporal sources. Use AI to design a multi-vari chart and interpret which source family dominates variation.
32	Session 32: Value Stream Mapping	Manufacturing	Map the complete flow of material and information to identify value-added vs. non-value-added time. Use AI to calculate process cycle efficiency and pinpoint the biggest waste pockets.
33	Session 33: 8 Wastes (DOWNTIME)	Healthcare	Identify and classify Defects, Overproduction, Waiting, Non-utilized talent, Transportation, Inventory, Motion, and Extra-processing. Use AI to audit a process description for hidden wastes.
34	Session 34: Box Plots & Descriptive Statistics	Service / Office	Summarise data with mean, median, quartiles, and outliers — and visualise group-to-group comparisons with side-by-side box plots. Use AI to generate and narrate a descriptive statistics report.



**Phase 4: Improve**

#	Session Title / LSS Tool	Industry	What You Will Learn
35	Session 35: Brainstorming & Affinity Diagrams	Manufacturing	Generate a high volume of improvement ideas and cluster them into themes. Use AI as a brainstorming partner to overcome blank-page paralysis and organise ideas into a digital affinity diagram.
36	Session 36: PICK Chart & Prioritisation Matrix	Healthcare	Sort ideas by Payoff and Implementation difficulty into four quadrants: Possible, Implement, Consider, Kill. Use AI to score ideas against weighted criteria and build a ranked solution list.
37	Session 37: Kaizen Events	Service / Office	Run a focused 3–5 day rapid improvement workshop. Use AI to prepare the event charter, build an agenda, generate pre-work analysis, and draft the A3 summary report.
38	Session 38: Mistake Proofing (Poka-Yoke)	Manufacturing	Design the error out rather than inspect it out. Learn the hierarchy of poka-yoke approaches and use AI to suggest prevention and detection devices for specific failure modes.
39	Session 39: 5S Methodology	Healthcare	Sort, Set in order, Shine, Standardise, Sustain — the foundation of a visual, waste-free workplace. Use AI to create a 5S audit checklist and score a workspace description.
40	Session 40: Standard Work & SOPs	Service / Office	Document the single best method for every repeatable task to eliminate variation. Use AI to convert a messy process narrative into a structured, step-by-step standard operating procedure.
41	Session 41: Pull Systems & Kanban	Manufacturing	Control work-in-progress and prevent overproduction with pull signals and kanban cards. Use AI to calculate kanban quantities and design a digital kanban board.
42	Session 42: Setup Reduction (SMED)	Healthcare	Cut changeover time by converting internal steps to external and streamlining what remains. Use AI to analyse a setup observation log and prioritise SMED actions.
43	Session 43: Design of Experiments (DOE)	Service / Office	Introduction to full and fractional factorial designs for optimising multiple process inputs simultaneously. Use AI to interpret main-effects plots, interaction plots, and identify optimal settings.
44	Session 44: Implementation Planning	Manufacturing	Build an action plan, run a pilot, and manage the change. Use AI to generate a Gantt-style action plan, anticipate resistance, and draft communication messages for each stakeholder group.





Phase 5: Control			
#	Session Title / LSS Tool	Industry	What You Will Learn
45	Session 45: Control Plans	Healthcare	The master document that sustains your improvements: what to measure, how often, who owns it, and what to do when something goes wrong. Use AI to draft a control plan from your FMEA and process map.
46	Session 46: Statistical Process Control (SPC)	Manufacturing	Apply the Western Electric rules to detect out-of-control signals on control charts. Use AI to automatically flag violations in a time-series dataset and draft a reaction plan.
47	Session 47: Advanced Control Charts	Service / Office	CUSUM and EWMA charts for detecting small, sustained shifts; p-charts and c-charts for attribute data. Use AI to select the right chart for rare-event or low-volume processes.
48	Session 48: Response Plans & Escalation	Manufacturing	Define the decision tree: who does what when a chart signals. Use AI to write a tiered escalation matrix and test it against historical out-of-control events.
49	Session 49: Visual Management & Dashboards	Healthcare	Make performance visible to everyone at a glance — KPI boards, traffic-light scorecards, and daily stand-up metrics. Use AI to design a dashboard layout and write KPI definitions.
50	Session 50: Audits & Sustainment	Service / Office	Layer Process Confirmation, Layered Process Audits, and mistake-proofing checks to lock in gains. Use AI to create an audit schedule, scoring rubric, and corrective action log template.
51	Session 51: Documentation & Knowledge Transfer	Manufacturing	Capture lessons learned, update SOPs, and hand off to the process owner. Use AI to summarise a project's DMAIC story into a transferable one-page report and lessons-learned database entry.
52	Session 52: Capstone: Full DMAIC Case Study	Cross-industry	Integrate all 51 sessions into a complete, end-to-end DMAIC project walkthrough. Participants use AI tools across every phase — from VOC to Control Plan — and present a mini-improvement story.

Curriculum subject to minor sequencing adjustments. Deliverables per session: practice dataset (.xlsx), data-usage guide with AI prompts (.docx), and one-page takeaway summary (.docx).

