Bayesian Methods in Evaluation Training Course

Professional Development Training Course Outline

Category	Monitoring and Evaluation	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Bayesian Methods in Evaluation are transforming how development practitioners, policymakers, and data professionals design, analyze, and interpret evidence in complex and uncertain environments. By integrating prior knowledge, probabilistic reasoning, and real-time data, Bayesian evaluation enables more adaptive, transparent, and decision-focused analysis than traditional frequentist approaches. This course equips participants with practical skills to apply Bayesian inference, hierarchical models, and probabilistic impact estimation across development, humanitarian, health, and governance programs.

Bayesian Methods in Evaluation Training Course is Designed for modern evaluation challenges, the training emphasizes learning-oriented evaluation, adaptive management, and evidence-based decision-making. Participants will work with real-world case studies using Bayesian frameworks for impact estimation, causal inference, predictive analytics, uncertainty quantification, and continuous learning systems. The course bridges theory and practice, enabling evaluators to confidently apply Bayesian methods using policy-relevant, ethical, and computationally efficient approaches.

Programme Curriculum

Bayesian Methods in Evaluation Training Course

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Course Objectives

By the end of this course, participants will be able to:

1. Apply Bayesian inference in evaluation design and analysis
2. Integrate prior evidence and expert judgment into evaluations
3. Design Bayesian impact evaluation frameworks
4. Interpret posterior distributions and credible intervals
5. Use hierarchical and multilevel Bayesian models
6. Conduct Bayesian causal inference for program attribution
7. Model uncertainty and risk in evaluation findings
8. Apply Bayesian adaptive evaluation for learning systems
9. Compare Bayesian vs frequentist evaluation approaches
10. Use Bayesian updating for real-time monitoring
11. Support decision-making under uncertainty
12. Communicate Bayesian results to non-technical stakeholders
13. Apply Bayesian methods ethically in policy and development contexts

Target Audience

1. Monitoring & Evaluation (M&E) professionals
2. Impact evaluation specialists
3. Data analysts and data scientists
4. Policy analysts and researchers
5. Development and humanitarian practitioners
6. Health, education, and social sector evaluators
7. Donor agencies and program managers
8. Academic researchers and PhD/Master’s students

Course Modules

Module 1: Foundations of Bayesian Thinking

- Bayesian probability vs classical probability
- Prior, likelihood, and posterior concepts
- Bayesian learning cycles
- When Bayesian methods are most suitable
- *Case Study:* Evidence synthesis in social programs

Module 2: Bayesian Evaluation Frameworks

- Bayesian logic models
- Bayesian theory of change
- Evaluation under uncertainty
- Decision-focused evaluation design
- *Case Study:* Adaptive development programs

Module 3: Prior Information and Evidence

- Informative vs non-informative priors
- Expert elicitation techniques
- Using historical data as priors
- Bias and prior sensitivity
- *Case Study:* Health program baseline integration

Module 4: Likelihood and Data Models

- Data-generating processes
- Choosing appropriate likelihoods
- Handling missing and noisy data
- Model assumptions
- *Case Study:* Survey data uncertainty

Module 5: Posterior Analysis and Interpretation

- Posterior distributions
- Credible intervals vs confidence intervals
- Bayesian hypothesis testing
- Practical interpretation for decisions
- *Case Study:* Education outcome estimates

Module 6: Bayesian Impact Evaluation

- Bayesian treatment effects
- Program attribution under uncertainty
- Counterfactual modeling
- Impact probability statements
- *Case Study:* Cash transfer evaluations

Module 7: Hierarchical & Multilevel Models

- Nested data structures
- Partial pooling
- Context-specific effects
- Cross-site learning
- *Case Study:* Multi-country NGO programs

Module 8: Bayesian Causal Inference

- Bayesian DAGs
- Causal assumptions
- Bayesian propensity models
- Sensitivity analysis

- *Case Study:* Governance reform impact

Module 9: Bayesian Adaptive Management

- Real-time learning systems
- Sequential updating
- Adaptive indicators
- Decision thresholds
- *Case Study:* Humanitarian response adaptation

Module 10: Bayesian Predictive Evaluation

- Posterior predictive checks
- Forecasting program outcomes
- Early warning systems
- Scenario modeling
- *Case Study:* Food security forecasting

Module 11: Uncertainty, Risk & Decision Analysis

- Quantifying uncertainty
- Risk-informed evaluation
- Value of information analysis
- Decision optimization
- *Case Study:* Policy investment choices

Module 12: Bayesian Methods for Small Samples

- Limited data challenges
- Borrowing strength
- Informative priors
- Robust inference
- *Case Study:* Pilot program evaluation

Module 13: Computational Tools for Bayesian Evaluation

- MCMC concepts
- Bayesian software ecosystems
- Model diagnostics
- Reproducible workflows
- *Case Study:* Program dashboards

Module 14: Ethics & Transparency in Bayesian Evaluation

- Ethical use of priors
- Transparency and reproducibility
- Stakeholder trust
- Responsible AI and Bayesian ethics
- *Case Study:* Sensitive population data

Module 15: Communicating Bayesian Results

- Visualizing uncertainty

- Bayesian storytelling
- Policy-friendly reporting
- Decision briefs
- *Case Study:* Donor reporting under uncertainty

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price

23 Nov 2026	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com