STATA for Longitudinal Analysis Training Course

Professional Development Training Course Outline

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

Course Introduction

STATA for Longitudinal Analysis Training Course is designed for researchers, data analysts, and statisticians aiming to master advanced techniques in analyzing repeated measures and panel data. This course focuses on building strong analytical skills using STATA's robust features, including data management, regression modeling, mixed-effects models, and survival analysis. Participants will gain practical experience in interpreting longitudinal datasets, ensuring accurate insights for evidence-based decision-making. With hands-on exercises, real-world datasets, and case studies, this course provides an intensive learning experience to enhance data-driven research and policy evaluation capabilities.

The course emphasizes practical applications and trending methodologies in longitudinal data analysis, including dynamic panel models, time-to-event analysis, hierarchical modeling, and longitudinal data visualization. It equips participants with advanced skills to handle complex datasets, perform rigorous statistical analysis, and effectively communicate results. By integrating theory with practice, learners will be able to improve research quality, streamline data analysis workflows, and contribute to strategic decision-making in academic, corporate, and public health settings.

Programme Curriculum

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Course Objectives

1. Master data management techniques in STATA for longitudinal datasets.
2. Conduct descriptive and exploratory analysis of panel data.
3. Apply fixed-effects and random-effects models for repeated measures.
4. Implement mixed-effects and hierarchical linear modeling.
5. Perform longitudinal survival and event history analysis.
6. Use time-varying covariates in regression models.
7. Conduct advanced regression diagnostics and model validation.
8. Visualize longitudinal data with effective graphical techniques.
9. Handle missing data using imputation and maximum likelihood methods.
10. Interpret complex statistical outputs accurately.
11. Develop reproducible STATA scripts for research documentation.
12. Integrate longitudinal analysis results into policy and business reports.
13. Evaluate case studies to derive actionable insights.

Organizational Benefits

1. Enhanced research and analytical capabilities across teams.
2. Improved data-driven decision-making and policy evaluation.
3. Standardization of longitudinal data analysis practices.
4. Increased efficiency in handling large datasets.
5. Reduction in statistical errors and misinterpretation.
6. Strengthened organizational credibility in research outputs.
7. Ability to produce reproducible and auditable analyses.
8. Advanced reporting skills for academic and corporate stakeholders.

9. Improved collaboration across research and analytics departments.
10. Enhanced capacity to undertake complex, multi-year studies.

Target Audiences

1. Data analysts
2. Biostatisticians
3. Public health researchers
4. Academic researchers
5. Social science researchers
6. Economists
7. Policy analysts
8. Healthcare data specialists

Course Duration: 10 days

Course Modules

Module 1: Introduction to STATA for Longitudinal Analysis

- Overview of STATA interface and commands
- Understanding panel and repeated measures data
- Importing and cleaning longitudinal datasets
- Managing time variables and ID structures
- Case study: Preparing a longitudinal health dataset
- Hands-on exercise: Dataset import and cleaning

Module 2: Descriptive and Exploratory Analysis

- Summary statistics for longitudinal data
- Visualization techniques for repeated measures
- Trend analysis over time
- Correlation and covariance exploration
- Case study: Trend analysis of patient outcomes
- Practical exercises with sample datasets

Module 3: Fixed-Effects and Random-Effects Models

- Conceptual understanding of FE and RE models

- Syntax and implementation in STATA
- Model assumptions and diagnostics
- Comparing FE vs RE results
- Case study: Employee productivity over time
- Exercise: Running FE and RE models

Module 4: Mixed-Effects and Hierarchical Models

- Introduction to multilevel modeling
- Random intercepts and slopes
- Time-varying covariates in mixed models
- Model interpretation
- Case study: Academic performance across schools
- Hands-on model building

Module 5: Longitudinal Regression Techniques

- Linear and generalized linear models
- Poisson and logistic regression for repeated measures
- Handling unbalanced panels
- Residual analysis and diagnostics
- Case study: Hospital readmission rates
- Exercises with real datasets

Module 6: Survival and Event History Analysis

- Kaplan-Meier curves and log-rank tests
- Cox proportional hazards models
- Time-to-event analysis with covariates
- Model assumptions checking
- Case study: Patient survival study
- Hands-on analysis

Module 7: Advanced Regression Diagnostics

- Multicollinearity and heteroskedasticity testing
- Influence statistics and outlier detection

- Model fit evaluation
- Handling missing data in diagnostics
- Case study: Longitudinal economic indicators
- Practical exercises

Module 8: Data Visualization in STATA

- Time-series and panel plots
- Graphing random effects
- Customizing plots for publications
- Visualizing residuals and predicted values
- Case study: Visualizing clinical trial outcomes
- Exercises in graph creation

Module 9: Handling Missing Data

- Patterns and mechanisms of missingness
- Multiple imputation in STATA
- Maximum likelihood approaches
- Sensitivity analysis
- Case study: Long-term survey dataset
- Hands-on imputation exercises

Module 10: Model Interpretation and Reporting

- Extracting and interpreting coefficients
- Communicating statistical findings
- Preparing tables and charts
- Reporting longitudinal results
- Case study: Policy evaluation report
- Exercises in reporting

Module 11: Reproducible STATA Workflows

- Automating analyses with do-files
- Using logs for reproducibility
- Version control of datasets

- Commenting and annotating scripts
- Case study: Research reproducibility
- Hands-on scripting exercises

Module 12: Integrating Results into Decision-Making

- Translating findings into policy recommendations
- Linking longitudinal results to strategic decisions
- Preparing stakeholder-friendly summaries
- Creating dashboards from STATA outputs
- Case study: Public health intervention evaluation
- Practical integration exercises

Module 13: Time-Varying Covariates Analysis

- Modeling time-dependent variables
- Interaction effects over time
- Graphical assessment of covariate effects
- Case study: Longitudinal workforce study
- Exercises on time-varying effects
- Model interpretation

Module 14: Case Studies in Longitudinal Analysis

- Healthcare outcomes evaluation
- Socioeconomic panel data studies
- Education longitudinal research
- Policy intervention assessment
- Multi-country longitudinal comparisons
- Hands-on analysis

Module 15: Capstone Project

- Participants select dataset for analysis
- Apply learned techniques across modules
- Generate detailed STATA report
- Visualize key findings

- Present results for peer review
- Case study integration

Training Methodology

- Interactive lectures with real-world examples
- Hands-on exercises using STATA datasets
- Guided case study analysis for practical understanding
- Collaborative group activities for applied learning
- Step-by-step project work to reinforce skills
- Continuous assessment and feedback

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

Start Date	End Date	Location	Price
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:

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