Regression Analysis in Health Training Course

Professional Development Training Course Outline

Category	Public Health	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Regression analysis in health is a powerful statistical and predictive analytics technique used to understand relationships between variables and improve patient outcomes, clinical decision-making, and healthcare system efficiency. In modern health data science, biostatistics, and epidemiology, regression models are essential for identifying risk factors, forecasting disease progression, and optimizing treatment strategies using real-world healthcare data, electronic health records (EHR), and population health datasets. Regression Analysis in Health Training Course provides a comprehensive foundation in linear regression, logistic regression, multivariate modeling, and advanced predictive techniques tailored specifically for healthcare applications.

With the rapid adoption of AI in healthcare, machine learning in clinical research, and big data analytics in public health, regression analysis has become a cornerstone for predictive modeling, hospital performance evaluation, chronic disease management, and healthcare policy planning. Participants will gain hands-on experience in applying regression techniques to real-world health scenarios such as patient readmission prediction, disease risk modeling, survival analysis, and treatment effectiveness evaluation, using industry-standard tools and datasets.

Programme Curriculum

Regression Analysis in Health Training Course

Introduction

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Course Duration

5 days

Course Objectives

1. Understand fundamentals of biostatistics and healthcare analytics
2. Apply linear regression modeling in clinical data analysis
3. Build logistic regression models for disease classification
4. Interpret health risk prediction models using real-world datasets
5. Analyze patient outcomes using multivariate regression techniques
6. Develop skills in predictive healthcare modeling and AI-driven analytics
7. Evaluate hospital readmission risk using regression methods
8. Perform survival and time-to-event regression analysis
9. Integrate EHR data for clinical decision support modeling
10. Apply machine learning regression techniques in health informatics
11. Assess public health trends using epidemiological regression models
12. Optimize resource allocation in healthcare systems using predictive models
13. Enhance decision-making through data-driven healthcare intelligence

Target Audience

1. Healthcare Data Analysts
2. Medical Researchers & Biostatisticians
3. Public Health Professionals
4. Clinical Data Scientists
5. Epidemiologists
6. Hospital Administrators & Health Managers
7. Medical Students & Postgraduates
8. Health Informatics Specialists

Course Modules

Module 1: Foundations of Health Data Analytics

- Introduction to healthcare datasets and EHR systems
- Basics of statistical thinking in medicine
- Data types in clinical research (categorical, continuous, time-series)
- Introduction to regression concepts in healthcare
- Case Study: Understanding diabetes prevalence patterns in population datasets

Module 2: Linear Regression in Clinical Research

- Simple vs multiple linear regression
- Interpretation of coefficients in medical context
- Assumptions of regression models in healthcare data
- Model validation and accuracy testing
- Case Study: Predicting blood pressure levels based on lifestyle factors

Module 3: Logistic Regression for Disease Prediction

- Binary classification in healthcare outcomes
- Odds ratio interpretation in clinical studies
- Model performance metrics (AUC, ROC)
- Feature selection in medical datasets
- Case Study: Predicting heart disease risk in patients

Module 4: Multivariate Regression in Patient Outcomes

- Handling multiple predictors in clinical models
- Confounding variables in epidemiology
- Interaction effects in healthcare analytics
- Model optimization techniques
- Case Study: ICU patient survival prediction

Module 5: Time Series & Survival Regression Analysis

- Survival analysis fundamentals
- Cox proportional hazards model
- Time-to-event data in clinical trials
- Censoring and hazard ratios
- Case Study: Cancer survival rate analysis

Module 6: Predictive Modeling in Healthcare AI

- Introduction to machine learning regression
- Supervised learning in health datasets
- Model training and testing workflows
- Feature engineering for clinical data
- Case Study: Predicting hospital readmission within 30 days

Module 7: Epidemiological Regression Models

- Disease spread modeling techniques
- Population health analytics
- Regression in outbreak prediction
- Public health surveillance systems
- Case Study: COVID-19 infection trend forecasting

Module 8: Advanced Healthcare Analytics & Deployment

- Integrating regression models into healthcare systems
- Decision support systems in hospitals
- Ethical considerations in predictive health analytics
- Data visualization for clinical insights

- Case Study: AI-driven patient risk scoring system in hospitals

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	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

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