# Precision Public Health Training Course

Professional Development Training Course Outline

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

## Course Introduction

Precision Public Health is an emerging data-driven discipline that integrates genomics, digital health, epidemiology, artificial intelligence (AI), big data analytics, and population health science to deliver highly targeted, timely, and effective health interventions. Unlike traditional public health approaches, Precision Public Health focuses on individual-level and subgroup-level risk stratification, enabling policymakers and health professionals to design evidence-based, predictive, and personalized population health strategies that improve outcomes and reduce inequities.

Precision Public Health Training Course is designed to equip learners with advanced competencies in health data science, geospatial analytics, machine learning in public health, surveillance systems, and precision disease prevention frameworks. It emphasizes real-world applications such as outbreak prediction, genomic surveillance, digital epidemiology, and AI-powered health decision systems, preparing participants to transform modern healthcare delivery using cutting-edge technologies.

## Programme Curriculum

**Precision Public Health Training Course**

**Introduction**

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disease prevention frameworks. It emphasizes real-world applications such as outbreak prediction, genomic surveillance, digital epidemiology, and AI-powered health decision systems, preparing participants to transform modern healthcare delivery using cutting-edge technologies.

**Course Duration**

5 days

**Course Objectives**

1. Understand foundations of Precision Public Health (PPH) and digital epidemiology
2. Apply AI and machine learning in population health analytics
3. Utilize big data analytics for disease surveillance and forecasting
4. Develop skills in geospatial health mapping and GIS technologies
5. Integrate genomics and precision medicine into public health systems
6. Design predictive models for infectious and non-communicable diseases
7. Strengthen competencies in real-time health data monitoring systems
8. Apply social determinants of health (SDOH) analytics
9. Implement digital health surveillance platforms
10. Evaluate health inequities using data-driven approaches
11. Use cloud computing and health informatics tools
12. Develop AI-driven outbreak response strategies
13. Build capacity in evidence-based health policy design

**Target Audience**

1. Public health professionals and epidemiologists
2. Medical doctors and clinicians
3. Data scientists in healthcare
4. Health informatics specialists
5. Government health policymakers
6. NGO and global health workers
7. Biostatisticians and researchers
8. Graduate students in public health, medicine, or data science

**Course Modules**

**Module 1: Foundations of Precision Public Health**

- Evolution of public health to precision-driven systems
- Core principles of population stratification
- Role of AI and data science in modern health systems
- Introduction to predictive public health frameworks
- Data ecosystems in global health
- **Case Study:** COVID-19 precision surveillance strategies in South Korea

**Module 2: Health Data Science & Analytics**

- Introduction to health data pipelines
- Data cleaning and preprocessing techniques
- Descriptive and inferential analytics
- Use of R, Python, and health dashboards

- Data visualization for public health insights
- **Case Study:** CDC data analytics for flu trend prediction

**Module 3: Artificial Intelligence in Public Health**

- Machine learning models for disease prediction
- Natural language processing for health data
- Deep learning in medical diagnostics
- AI-driven decision support systems
- Ethics of AI in healthcare
- **Case Study:** AI-based tuberculosis detection systems in India

**Module 4: Geospatial Analytics & GIS**

- Fundamentals of Geographic Information Systems
- Spatial clustering of disease outbreaks
- Heatmaps for health risk mapping
- Remote sensing for environmental health
- GeoAI applications in epidemiology
- **Case Study:** Malaria mapping in Sub-Saharan Africa

**Module 5: Genomics & Precision Medicine in Public Health**

- Basics of population genomics
- Genetic risk profiling for diseases
- Integration of genomics in surveillance
- Pharmacogenomics and public health
- Ethical considerations in genomic data use
- **Case Study:** Genomic tracking of Ebola virus outbreaks

**Module 6: Digital Epidemiology & Surveillance Systems**

- Real-time disease monitoring systems
- Mobile health (mHealth) technologies
- Social media-based outbreak detection
- Electronic health records integration
- Early warning systems design
- **Case Study:** Google Flu Trends analysis and limitations

**Module 7: Predictive Modeling & Outbreak Forecasting**

- Time-series modeling in epidemiology
- Simulation models for pandemics
- Risk prediction algorithms
- Scenario planning for health emergencies
- Model validation techniques
- **Case Study:** COVID-19 predictive modeling in the UK

**Module 8: Health Policy, Ethics & Implementation**

- Data-driven health policy design
- Equity and social determinants of health

- Data privacy and governance frameworks
- Implementation science in public health
- Scaling precision interventions
- **Case Study:** Vaccine distribution optimization during COVID-19

### 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 |
|---|---|---|---|

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

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

**Register Online Now**

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