Chronic Disease Epidemiology Training Course

Professional Development Training Course Outline

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

Course Introduction

Chronic diseases such as cardiovascular diseases, cancer, diabetes, chronic respiratory diseases, and metabolic syndromes are the leading causes of morbidity and mortality globally. Chronic Disease Epidemiology Training Course is designed to build advanced competencies in non-communicable disease (NCD) surveillance, epidemiological methods, risk factor analysis, population health intelligence, and evidence-based public health interventions. The course integrates modern biostatistics, data science in epidemiology, digital health surveillance systems, and global burden of disease frameworks to equip learners with practical and analytical skills for real-world application.

With the rising global burden of NCDs driven by lifestyle changes, urbanization, aging populations, and environmental exposures, there is a growing demand for professionals skilled in disease modeling, cohort studies, case-control analysis, health informatics, and preventive epidemiology strategies. This training emphasizes data-driven decision-making, predictive analytics, health policy development, and community-based intervention design, preparing participants to contribute effectively to national and global chronic disease control programs.

Programme Curriculum

Chronic Disease Epidemiology Training Course

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10 days

Course Objectives

1. Master principles of chronic disease epidemiology and surveillance systems
2. Apply biostatistical methods in NCD research and analysis
3. Conduct cohort, case-control, and cross-sectional studies
4. Analyze risk factors for cardiovascular and metabolic diseases
5. Utilize global burden of disease (GBD) methodologies
6. Interpret population health data using R, SPSS, and Python tools
7. Develop chronic disease prevention and control strategies
8. Evaluate screening programs and early detection models
9. Integrate digital epidemiology and health informatics systems
10. Assess environmental and occupational health impacts on NCDs
11. Design community-based intervention programs
12. Strengthen policy formulation and health systems research
13. Apply predictive modeling and AI in disease forecasting

Target Audience

1. Public health professionals
2. Epidemiologists and biostatisticians
3. Medical doctors and clinicians
4. Health policy analysts
5. Research scientists and academics
6. NGO and humanitarian health workers
7. Data analysts in health sectors
8. Graduate students in public health and medicine

Course Modules

Module 1: Foundations of Chronic Disease Epidemiology

- Overview of NCD burden and global trends
- Key concepts: incidence, prevalence, mortality
- Epidemiological transition theory
- Case study: Global rise of diabetes in urban populations
- Introduction to surveillance systems

Module 2: Biostatistics for Epidemiology

- Descriptive and inferential statistics
- Measures of association (RR, OR)
- Hypothesis testing techniques
- Case study: Hypertension prevalence analysis
- Statistical software introduction

Module 3: Study Designs in Epidemiology

- Cohort study design principles
- Case-control study applications
- Cross-sectional survey methods
- Case study: Smoking and lung cancer association
- Bias and confounding control

Module 4: Cardiovascular Disease Epidemiology

- Risk factors and population trends
- Hypertension and stroke epidemiology
- Lifestyle determinants
- Case study: Heart disease in aging populations
- Prevention strategies

Module 5: Diabetes and Metabolic Disorders

- Type 1 vs Type 2 diabetes epidemiology
- Obesity and insulin resistance
- Nutritional epidemiology
- Case study: Urban obesity epidemic
- Prevention interventions

Module 6: Cancer Epidemiology

- Cancer registry systems
- Carcinogens and risk factors
- Screening effectiveness
- Case study: Breast cancer screening programs
- Survival analysis basics

Module 7: Chronic Respiratory Diseases

- COPD and asthma epidemiology
- Air pollution impact
- Occupational exposures
- Case study: Urban air quality and asthma spikes
- Intervention models

Module 8: Infectious vs Chronic Disease Interaction

- Dual burden of disease
- HIV and NCD comorbidities
- Health system challenges
- Case study: TB-diabetes co-infection

- Integrated care models

Module 9: Risk Factor Epidemiology

- Behavioral risk factors (tobacco, alcohol)
- Dietary and physical inactivity analysis
- Genetic predispositions
- Case study: Tobacco control success stories
- Risk attribution methods

Module 10: Environmental Epidemiology

- Climate change and NCDs
- Pollution exposure pathways
- Urbanization effects
- Case study: Industrial pollution and cancer clusters
- Exposure assessment tools

Module 11: Health Informatics & Digital Epidemiology

- Electronic health records (EHRs)
- Big data in epidemiology
- Mobile health surveillance
- Case study: COVID-era chronic disease tracking
- Data integration systems

Module 12: Global Burden of Disease Analysis

- DALYs and QALYs concepts
- WHO burden estimation methods
- Regional health comparisons
- Case study: Global NCD mortality ranking
- Policy implications

Module 13: Screening and Early Detection Programs

- Screening test validity
- Sensitivity and specificity
- Population screening strategies
- Case study: Cervical cancer screening success
- Cost-effectiveness analysis

Module 14: Public Health Intervention Design

- Behavior change models
- Community engagement strategies
- Health promotion frameworks
- Case study: National anti-obesity campaigns
- Program evaluation methods

Module 15: Predictive Modeling & AI in Epidemiology

- Machine learning in disease prediction

- Time-series forecasting
- Risk stratification models
- Case study: AI-based heart disease prediction
- Ethical considerations in AI health use

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

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