Training course on Geographic Information Systems (GIS) in Public Health Disease Mapping

Professional Development Training Course Outline

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

Course Introduction

Training Course on Geographic Information Systems (GIS) in Public Health Disease Mapping

Training Course on **Geographic Information Systems (GIS) in Public Health Disease Mapping** is designed for public health professionals, epidemiologists, and researchers interested in utilizing GIS technology for disease mapping and epidemiological analysis. This course explores the principles of GIS and its applications in public health, emphasizing how spatial data can enhance disease surveillance, outbreak response, and health resource allocation.

As public health challenges become increasingly complex, GIS provides powerful tools for visualizing and analyzing spatial data related to disease distribution and determinants. Participants will learn to leverage GIS for effective disease mapping, enabling informed decision-making and strategic planning in public health initiatives. Through interactive workshops, case studies, and hands-on exercises, attendees will gain practical experience in using GIS for public health applications.

Course Objectives

1. Understand the principles and concepts of GIS in public health.
2. Identify key applications of GIS in disease mapping and surveillance.
3. Develop skills in spatial data collection and analysis.
4. Utilize GIS software for disease mapping and visualization.
5. Analyze spatial patterns and trends in disease distribution.
6. Engage stakeholders using GIS-generated maps and data.
7. Explore case studies of successful GIS applications in public health.
8. Advocate for the integration of GIS in public health policy and practice.
9. Prepare for emerging challenges in GIS and public health.
10. Utilize technology and data management tools for GIS applications.

11. Assess the impact of environmental and social determinants on health through GIS. Develop skills for integrating GIS with other data sources to enhance analysis.
12. Evaluate ethical considerations in the use of GIS for public health.
13. Create effective training materials for GIS applications in public health settings.

Target Audience

1. Public health professionals
2. Epidemiologists
3. Health researchers
4. GIS specialists
5. Community health workers
6. Policy makers
7. Medical students
8. Environmental scientists

Course Duration: 10 Days

Course Modules

Module 1: Introduction to GIS in Public Health

- Overview of GIS concepts and terminology.
- Historical context of GIS in public health applications.
- Key principles of spatial analysis and mapping.
- Current trends and challenges in GIS technology.
- The role of GIS in public health decision-making.

Module 2: GIS Software and Tools

- Introduction to popular GIS software (e.g., ArcGIS, QGIS).
- Navigating GIS interfaces and features.
- Data types and formats in GIS.
- Importing and managing spatial data.
- Hands-on exercises with GIS software.

Module 3: Spatial Data Collection and Management

- Methods for collecting spatial data (e.g., surveys, remote sensing).
- Understanding geocoding and spatial referencing.
- Managing and organizing GIS datasets.
- Data quality and validation processes.
- Case studies on data collection in public health.

Module 4: Disease Mapping Techniques

- Techniques for mapping disease incidence and prevalence.
- Analyzing spatial patterns of disease distribution.
- Creating heat maps and choropleth maps.
- Visualizing health disparities using GIS.

- Evaluating the effectiveness of mapping techniques.

Module 5: Spatial Analysis in Public Health

- Conducting spatial analysis to identify disease hotspots.
- Understanding spatial statistical methods (e.g., spatial autocorrelation).
- Utilizing GIS for outbreak investigations.
- Assessing environmental and social determinants of health.
- Case studies on spatial analysis applications.

Module 6: Engaging Stakeholders with GIS

- Strategies for presenting GIS data to stakeholders.
- Creating user-friendly maps and visualizations.
- Communicating findings effectively using GIS.
- Building partnerships for GIS-based public health initiatives.
- Evaluating stakeholder engagement efforts.

Module 7: Policy Advocacy and GIS

- Understanding the policy landscape for GIS in public health.
- Advocating for the integration of GIS in health policy.
- Engaging with policymakers using GIS-generated evidence.
- Case studies of successful policy advocacy through GIS.
- Evaluating the impact of GIS on public health policies.

Module 8: Future Trends in GIS and Public Health

- Emerging technologies in GIS (e.g., mobile GIS, real-time data).
- Innovations in data collection and visualization.
- Global perspectives on GIS in public health.
- Preparing for future challenges in GIS applications.
- Building resilient GIS systems for public health.

Module 9: Integrating GIS with Other Data Sources

- Understanding the importance of combining GIS with demographic, health, and environmental data.
- Techniques for linking GIS data with statistical and qualitative data.
- Case studies demonstrating successful integration of multiple data sources.
- Evaluating the impact of integrated data on public health decisions.
- Hands-on exercises in data integration using GIS tools.

Module 10: Ethical Considerations in GIS Applications

- Exploring ethical issues related to data privacy and confidentiality in GIS.
- Understanding the implications of spatial data on marginalized communities.
- Developing guidelines for ethical GIS practices in public health.
- Case studies on ethical dilemmas encountered in GIS projects.
- Strategies for fostering ethical awareness among GIS practitioners.

Module 11: Training and Capacity Building in GIS

- Developing effective training programs for public health professionals on GIS.
- Strategies for building GIS capacity within organizations and communities.
- Creating user-friendly educational materials and resources.
- Evaluating the effectiveness of GIS training initiatives.
- Case studies on successful capacity-building efforts in GIS.

Module 12: Advanced GIS Techniques for Public Health

- Exploring advanced spatial analysis methods (e.g., geospatial modeling, machine learning).
- Utilizing GIS for predictive analytics in disease outbreaks.
- Case studies on innovative GIS applications in addressing public health challenges.
- Hands-on exercises with advanced GIS software features.
- Future trends and innovations in GIS technology for public health applications.

Training Methodology

- **Interactive Workshops:** Facilitated discussions, group exercises, and problem-solving activities.
- **Practical Demonstrations:** Hands-on experience with GIS software and tools.
- **Case Studies:** Real-world examples to illustrate effective GIS applications.
- **Role-Playing and Simulations:** Practice decision-making in realistic scenarios.
- **Expert Presentations:** Insights from experienced GIS specialists and public health leaders.
- **Group Projects:** Collaborative development of GIS-based public health plans.
- **Action Planning:** Development of personalized action plans for GIS implementation.
- **Digital Tools and Resources:** Utilization of online platforms and applications for GIS.
- **Peer-to-Peer Learning:** Pairing experienced GIS users with those new to the field.
- **Post-Training Support:** Access to online forums, mentorship, and continued learning resources.

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

- Participants must be conversant in English.
- Upon completion of training, participants will receive an Authorized Training Certificate.
- The course duration is flexible and can be modified to fit any number of days.
- Course fee includes facilitation, training materials, 2 coffee breaks, buffet lunch, and a Certificate upon successful completion.
- One-year post-training support, consultation, and coaching provided after the course.
- Payment should be made at least a week before the training commencement to Fineskill Training Center account, as indicated in the invoice, to enable better preparation.

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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