

DGHT GIS Foundations Training Online Format

Goal

This training is designed to provide the participants knowledge and skills in the use of GIS software and geospatial data to better describe DGHT programmatic and research activities.

Audience

As a basic to intermediate course, the information is designed for staff new and experienced to the use of GIS.

Learning Objectives

By the end of the training, the participants should be able to do the following:

- Describe the potential of GIS to answer additional programmatic and research questions
- Create thematic maps using public and program data

Hardware and Software Requirements

Software: QGIS Version 3.22.5 <https://www.qgis.org/en/site/>

Software: GeoDa 1.2 <https://geodacenter.github.io/>

Resources

Tutorial: https://docs.qgis.org/3.22/en/docs/training_manual/

Documentation: https://docs.qgis.org/3.22/en/docs/user_manual/

Reading Material: https://docs.qgis.org/3.22/en/docs/gentle_gis_introduction/

Capstone Project

After the course is complete, all participants are invited to create a Capstone Project where GIS is used to answer analytical questions related to new or existing project at work. Final output is due in two weeks after session 10.

1. Submit your idea and methods to instructors
2. Receive feedback
3. Start working on the project
4. If needed request help from instructors
5. Submit the project. Depending on complexity of the project, the submission can be in-progress or a final map.

Instructors

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Week	Date	Home work Due Date	Goals	Homework (Submit screenshot of map at the end of exercise)
1 Beginner	TBD	TBD	Introduction to the course, learn GIS Basics for Public Health, QGIS software upgrades and tutorials updates, hands-on lessons in QGIS to learn software interface, add layers, navigate map canvas by using training data.	<ol style="list-style-type: none"> 1. Introduction and welcome to the course (Week1a.mp4). 2. Lecture: GIS for Public Health (Week1b.mp4) 3. Reading: Gentle Introduction, 2.1 – 2.6, 3.1 – 3.5, 6.1 - 6.2, 6.4 – 6.5 4. Hands on homework <ul style="list-style-type: none"> Module 1. Course Introduction Module 2. Creating and exploring basic map <ul style="list-style-type: none"> 2.1. Lesson: An Overview of the Interface 2.2. Lesson: Adding your first layers 2.3. Lesson: Navigating the Map Canvas <p>Office Hour</p>
2 Beginner			Learn symbology, classifying vector data using attribute data, applying labels.	<ol style="list-style-type: none"> 1. Lecture: Types of Maps (Week2a.mp4) 2. Lecture: Challenging Maps – Symbology and Labels (Week2b.mp4) 3. Reading: Gentle Introduction, 3.8, 4.1 – 4.8 4. Hands on homework <ul style="list-style-type: none"> Module 2.4. Lesson: Symbology Module 3. Classifying Vector Data <ul style="list-style-type: none"> 3.1. Lesson: Vector Attribute Data 3.2. Lesson: Labels <p>Office Hour</p>
3 Beginner			Learn map design and elements, classification, and print layout.	<ol style="list-style-type: none"> 1. Lecture: Data Classification Types and Methods (Week3a.mp4) and GIS Map Design and Composition (Week3b.mp4) 2. Reading: Gentle Introduction: 9.1 – 9.11 3. Hands on homework <ul style="list-style-type: none"> Module 3.3. Classification Module 4.1 Lesson: Using Print Layout <p>Office Hour</p>

<p>4 Intermediate</p>			<p>Learn Joins and Filters, mapping epidemiological data from public sources, create choropleth and proportional symbols maps.</p>	<ol style="list-style-type: none"> 1. Hands on homework QGIS Training Additional Module 1 - Mapping COVID-19 data.pdf 2. Homework hands on demonstration video Creating Choropleth and Proportional Symbol Map exercise (Week4.mp4) <p>Office Hour</p>
<p>5 Intermediate</p>			<p>Learn how to create new vector dataset and edit attribute table</p>	<ol style="list-style-type: none"> 1. Reading: Gentle Introduction: 5.1 – 5.10 2. Hands on homework Module 5. Creating Vector Data 5.1. Lesson: Creating a New Vector Dataset 3. QGIS Training Additional Module 2 - Editing and Mapping HIV data.pdf (Week5.mp4) <p>Office Hour</p>
<p>6 Intermediate</p>			<p>Learn Map Projections and Coordinate Systems, reprojecting data, accessing PEPFAR GIS data, creating choropleth and proportional symbol maps with PEPFAR data.</p>	<ol style="list-style-type: none"> 1. Lecture: Datum and Coordinate Systems (Week6.mp4) 2. Reading: Gentle Introduction: 8.1 – 8.9 3. Hands on homework Module 6. Vector Analysis 6.1. Lesson: Reprojecting and Transforming Data 4. Accessing PEPFAR GIS data. (Handout for CDC staff only) 5. Creating Choropleth and Proportional symbol maps with PEPFAR data (CDC staff) or public data (interns) (independent homework) <p>Office Hour</p>