

## **QGIS for ALL: From LiDAR to Topos With QGIS**

### *Preparing a topographic map and slope analysis for your design project*

Understanding the lay of the land is an essential first step in many architecture, landscape design, and planning projects. In this three session workshop participants will learn how to use the free mapping software QGIS to create contour maps that are usable on various platforms such as CAD.

Publicly available LiDAR data is used to create 1-foot contours and perform a slope analysis as well as stylize and layout the maps for printing and export to DXF for use in CAD programs. This introductory experience will lay the groundwork for participants to understand the potential of QGIS. For those participants who are familiar with ArcMAP or other GIS software it will be a gentle introduction to QGIS.

Assignments with prepared data sets are provided as homework between sessions and are discussed briefly in class. Thirty minutes of Q and A time is provided at the end of the hour-long session. Live class sessions will be recorded and made available to participants using a google doc folder.

Small scale designers, architects, planners who want to do quick grading studies of an area, and anyone who wants to use this free software to better understand or shape a landscape, are all welcome in this course. Participants should have a basic knowledge of mapping software.

The instructor, [Sebastian \(Bas\) Gutwein](#), teaches surveying, the Adobe Creative Suite, AutoCAD, and GIS at the Conway School.

PRIOR TO CLASS: Participants will need to install QGIS Standalone using this link:

<https://qgis.org/en/site/forusers/download.html>

An optional task is to complete the following tutorial:

<https://www.youtube.com/watch?v=kCnNWyl9qSE>

## **COURSE OUTLINE**

Week 1: Introduction to QGIS and download LiDAR process. Demonstration of the basic functions of QGIS and the process of downloading LiDAR data.

Total class time: 1 hour with 30 min Q and A at the end.

Homework assignment 1: Application of the LiDAR download process with a sample dataset provided

Week 2: Answer general questions on assignment 1. Demonstrate the use of a LiDAR DEM to make contours and conduct a slope analysis

Total class time: 1 hour with 30 min Q and A at the end.

Homework assignment 2: use the provided LiDAR DEM to make contours and conduct a slope analysis

Week 3: Answer general questions on assignment 2. Demonstrate how to prepare a print layout and how to export for use in other programs. Short overview of the many other uses of QGIS.

Total class time: 1 hour with 30 min Q and A at the end.

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