

Precision Viticulture Toolbox Development. Program.

April 6-8, 2020

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- 🖥️ Computer activity 🍷 Vineyard activity 🎓 Lecture

1. Fundamental of GIS for precision viticulture

🎓 What is a GIS?

🖥️ Introduction to open source and free, but powerful and production-ready resources (help to install on your personal laptop)

🎓 Relevant skills in GIS for precision viticulture

🖥️ The GIS interface

2. Working with vector data (point, and polygons like vine locations and vineyard layouts)

🎓 Introduction to vector data layers

🖥️ Data representation in GIS

🖥️ Using the attribute table

🖥️ Viewing and changing layer properties

🖥️ Classifying vector data

🖥️ Introduction to coordinates, projections and how to combine different systems in a single project

🖥️ Making maps

🖥️ Create vector data

🖥️ Feature topology

🖥️ Analysis of vector data

🖥️ Reproject and transform data

🎓 Basic spatial statistics

🎓🖥️ Interpolation of vineyard data

3. Surveying and layouts with GPS

- 📖 Fundamental of GPS Technology
- 📖 Use GPS data in the GIS
- 🍇 Real time kinematic GPS
- 🍇 Post-processed kinematic GPS

4. Working with raster data

- 📖 Introduction to raster data layers
- 📖 Transforming raster data
- 🍇 Digital elevation models
- 📖 Terrain analysis
- 📖 Analysis of raster data
- 📖 Transforming raster into vector

5. Use of satellite images in precision viticulture

- 📖 Understanding the data source (Landsat, Sentinel and Planet)
- 📖 Pre-processing the data for reliable information
- 📖 Good practices in the use of satellite data
- 📖 Creating NDVI and other vegetation indexes map

6. Sensors to assess variability in the vineyard

- 🍇 Calibration and use of sensors for characterizing vineyard variability

7. Practical applications of these technologies

- 📖 Share maps through mobile apps
- 📖 Create interactive maps on the web

- ❖ Creating management zones for site-specific and variable rate management
- ❖ Uploading management zones into AgLeader boards for variable rate management
- ❖ Programming mechanical equipment for variable rate applications

8. New technologies on the market

9. Wrap up and conclusions. Diplomas ceremony.

Time table:

Activity	April 6	April 7	April 8
1	X		
2	X		
3	X		
4		X	
5		X	
6		X	
7			X
8			X
9			X

Practical info:

- Program will run from 8am to 5pm with one-hour break for a total of 24h of intensive hands-on experience.
- Cost is \$500 for early bird registration (before March 23), \$600 otherwise. Currently enrolled students will receive \$200 dollar discount.
- Seats are limited to 30 attendees.
- Diploma of attendance to people completing the full workshop.
- PREVIOUS KNOWLEDGE IN GIS IS NOT REQUIRED