

COURSE PROGRAM



REMOTE SENSING AND
GEOGRAPHIC
INFORMATION SYSTEMS
APPLIED TO
VITICULTURE



MODULE 1.- THE FIRST STEPS WITH gvSIG

- Precision viticulture
- Geographic information systems and remote sensing
- Installing gvSIG
- Importing your first vector layers
- Direct and indirect queries
- Symbols and labelling
- Importing aerial orthophotographs from you region
- Digitalizing plots
- Exercises

MODULE 2.- REMOTE SENSING AT THE INTERPLOT LEVEL

- NDVI calculation using images from Deimos
- Obtaining the average health of a plot in a cooperative winery
- NDVI calculation using images from Landsat 8
- Automatically tracking plots with water stress, moisture accumulation and problems with foliar health
- Exercises

MODULE 3.- REMOTE SENSING AT THE INTRAPLOT LEVEL

- NDVI calculation using images from Deimos, Rapid Eye and Quickbird
- Separating the vineyard automatically into different regions based on plant vigor

- Calculating other vegetative indices using the map calculator
- Automating processes by using the modeler in SEXTANTE
- Exercises

MODULE 5.- MULTITEMPORAL ANALYSIS

- Getting a phenological curve by the temporal analysis of NDVI
- Automatic digitalization of regions of suspended growth
- Early detection of areas experiencing foliar growth problems
- Segmentation and harvest management
- Exercises

EXTRA MODULE.- THE GEOREFERENCING AND RADIOMETRIC CORRECTION OF SATELLITE IMAGES

- Geometric correction of satellite images from control points with reference maps
- Affine and polynomial transformations
- Establishing control points
- Transferring original digital levels to the corrected position
- Generating georeferenced files
- Radiometric correction of satellite images
- Calculating apparent reflectivity