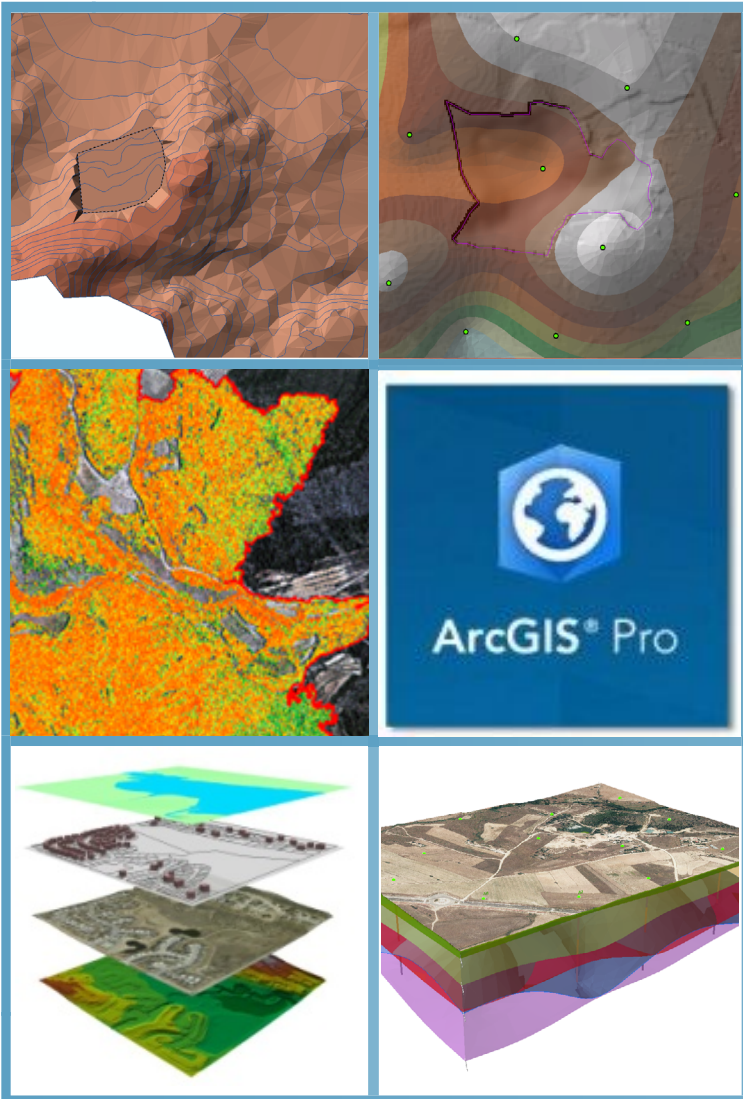
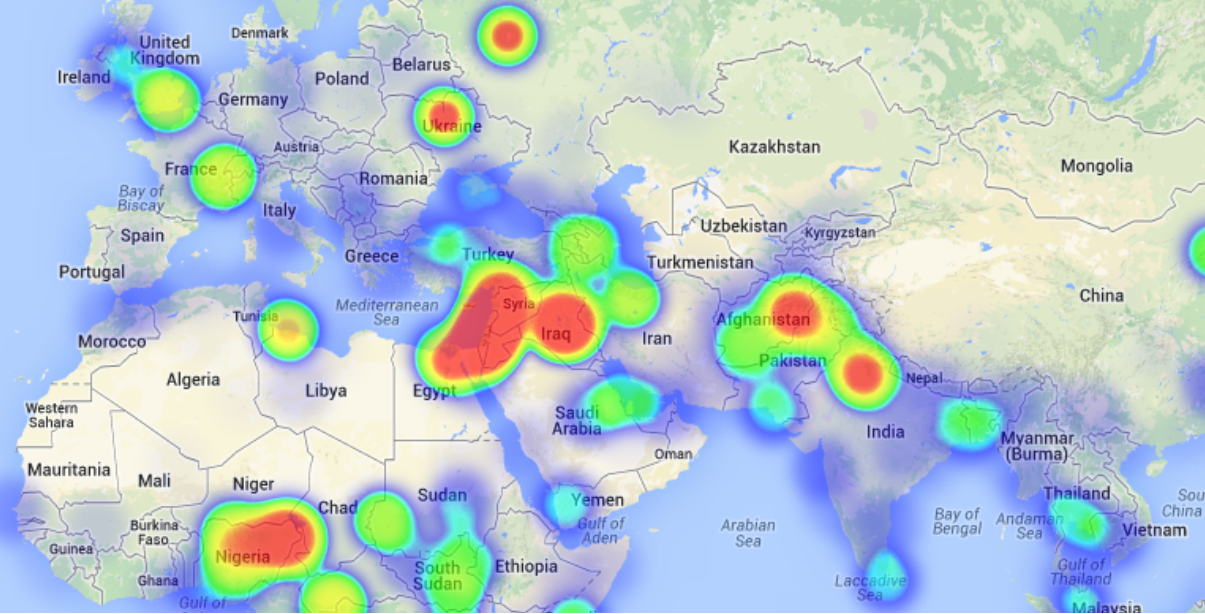
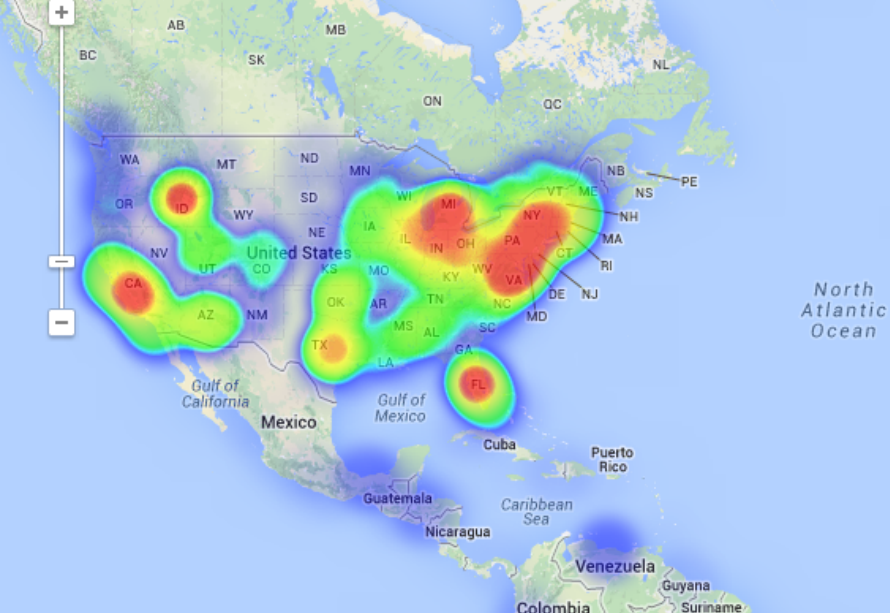


# ARCGIS PRO COURSE, BEGINNER LEVEL ONLINE TRAINING





## TRAINING OVERVIEW



This course will provide a basic introduction in ArcGIS PRO, the new ArcGIS Desktop release. The training material will be focused on vector and raster data models, how to handle them and store them in a geodatabase, their relationship within a geodatabase and on how to develop final cartographic products and maps.

Students will be trained in the creation and editing of vector and raster data, in the usage of basic geoprocessing tools available in ArcGIS PRO, in the management of a geodatabase and in the development of basic mapping products.

## GOALS



- Highlight the importance and utility of a Geographic Information System (GIS), its integration and applicability in a variety of professional sectors.
- General overview about the essential GIS concepts and about all the basic skills needed in handling ArcGIS PRO.
- Learn about GIS key tools in an appropriate and professional way, usage of vector and raster data information in order to develop different operations and spatial analysis.
- Find about all possible difficulties which you may encounter in the execution of GIS projects, and their solutions through practical exercises.
- Gain experience in data preparation, layout development, map creation and high quality products delivery.





## ONLINE FORMAT METHODOLOGY

The online format uses the online learning and technological platform Moodle, a telematics tool that works through the internet. It is a learning platform that provides students access to the training course content, fulfill the practical cases and consult the teaching staff, as well as availability to the resources and help at any moment.

The platform is available 24 hours a day, through which the student will be able to ask for help at any given moment. Instructors will reinforce the student's autonomy during its training process, supporting and clarifying any possible doubts that may arise along the course.

Therefore, the course is carried out through different areas available on the online platform and where the student can search for training material, download information, complete the practical exercises and take assessments to verify the assimilated knowledge. The teachers will offer progressively the basic information needed to work towards the completion of a final practical case

## INSTRUCTOR



### Santiago Pardini Herranz

With Bachelor's degree in environmental sciences from Almeria University and master in engineering and environmental management from escuela de organización industrial (EOI), Santiago is a professional in the GIS consultancy sector and remote sensing at TYC GIS Integral Solutions.

Santiago has diverse specialist courses in geographic information systems, remote sensing, CAD and BIM. He has more than 7 years experience in application of those technologies in environmental consultancy, diverse engineering companies, Geomarketing, spatial planning, etc.



## STUDENT PROFILES



This course is aimed at students and professionals related to engineering, architecture, biology, geography, geology and environmental sciences interested in the applications of Geographic Information Systems in their present or future professional activities.





## 1 - INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS

Introduction.

Definition and basic concepts.

Uses of Geographic Information Systems.

Geographic information: vector data models, raster data models and other data models (CAD, TIN, etc.). Main features of each data module, advantages and disadvantages.

Introduction to ArcGIS Desktop: ArcMap, ArcCatalog, ArcToolbox, ArcScene and ArcGlobe and ArcGIS Pro

Arcmap interface, extensions and tools.

Guided exercise: Verify the functionality of the software.

## 2 - VECTOR DATA MODEL. INFORMATION DISPLAY

Information layers: how to add layers, features and attribute tables.

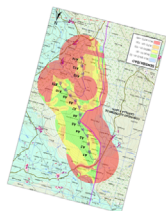
Data tools: search and queries.

Selection tools: selection per feature, selection by spatial location and capture information.

Layer symbology: basic symbology, by category, by quantity and through graphics.

Other display options: labelling and transparencies.

Guided exercise: (load layers, types of selection, symbology) and assessment.



## 3 - COORDINATE SYSTEMS, PROJECTIONS AND GEOREFERENCING

Introduction to Coordinate systems and projections.

Defining Coordinate Systems.

Coordinate system transformation. Reprojection of ED50 or ETRS89 geographic databases.

Image, layer and CAD files georeferencing.

Guided exercise: (define, project, image georeferencing and CAD) and assessment.

## 4 - VECTOR DATA MODEL. EDITING AND CREATING INFORMATION

Creation and editing of spatial data.

- Creation of spatial data: Editing tools bar. Digitization techniques.

- Exporting and importing spatial information files from different formats (CAD, DGN, Shp, ASCII, etc.). Create layers from CAD files.

- Modify existing layers.

- Creation of layers from coordinates.

Creation and editing of data in the attribute table:

- Structure of the Attribute table.

- Types of data included in an attribute table.

- Modify information from a table.

- Calculate geometric information (Surface, perimeter, length, etc.).

- Creation of statistics from the table.

- Export tables to Excel and other formats. Creation of reports and graphics.

Practical exercises (create layers, digitize, modify attribute tables, add fields, geometric calculations, field calculator) and assessment.

## 5 - DATABASE MANAGEMENT

Designing databases.

Joining and relating databases.

Spatial joins. Obtain statistics from database information and spatial position of elements in a layer.

Guided exercise: (join database and spatial relations) and assessment.

## 6 - SPATIAL ANALYSIS. MOST COMMON GEOPROCESSING TOOLS.

Extract Toolset (Clip, Split).

Overlay toolset (intersect, union).

Proximity toolset (buffer analysis, Thiessen polygons).

Multi-criteria analysis. Obtaining optimum areas according to several criteria.

Guided exercise: (spatial analysis) and assessment.

## 7 - MAP PRODUCTION

Adjusting the size and type of sheet.

Inserting elements: north, scale bar, numeric scale, map legend.

Including other elements: images, graphs and tables.

Adding several data frameworks

Creation and use of templates.

Printing options

Guided exercise: Creation of a map.





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