# Sages

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| Course code: | **GEOSERV** |
| Course title: | **Presentation and sharing of spatial data using GeoServer** |
| Days: | 3 |

## Description:

**Course intended for:**

The training has been designated for beginner programmers and administrators wanting to get familiar with the issues of sharing of spatial data on the Internet.

**Course objective:**

The training objective is to get the participants familiar with theoretical and practical aspects of spatial data presentation and sharing on the Internet in accordance with the applicable standards.

**Course strengths:**

- Manage a GeoServer and configure its environment

- Use various formats of spatial data to make it a source of OGC services

- Effectively and quickly present and share spatial data using WMS and WFS protocols

After the training, the participants will be able to configure and administer a GeoServer and effectively and securely share spatial data.
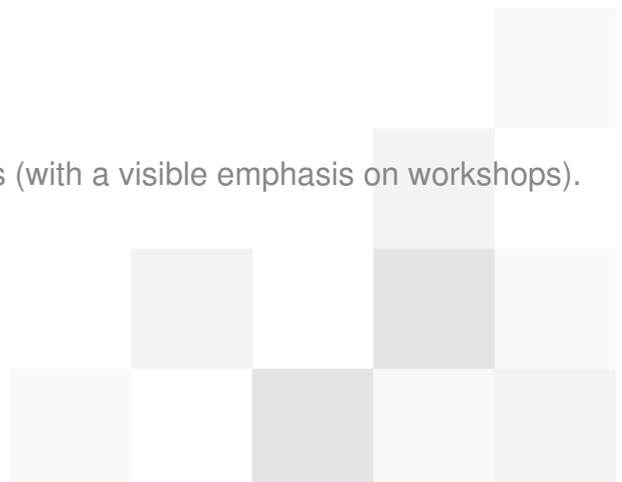
**Requirements:**

The participants are required to have the basic knowledge on development of Web applications. It will be easier for them to understand the training material if they are familiar with the geographic information systems (GIS).

**Course parameters:**

3*8 hours (3*7 net hours) of lectures and workshops (with a visible emphasis on workshops).

Group size: no more than 10 participants.

# Course curriculum:

1. Introduction to GIS and WebGIS

2. Discussing of the platform

3. Installation

4. Data catalogue and its structure

5. The administration interface

    - Server settings

    - Preview of layers

    - Working space, data sources, layers, layer groups

    - configuration of OGC services (WMS, WFS, WCS)

    - Tile Cache

    - security

    - systems of coordinates and demo requests

6. Data sources for OGC services

    - Vector data

        - shapefile

        - GML

    - Raster data

        - geoTIFF and other formats

    - databases

        - PostGIS

        - Oracle Spatial

- SQL Server
- Views from the GeoServer level and their parameterization
  - WMS and WFS as data sources

7. Layer styling (SLD)
  - basic SLD mechanisms
  - Graphic SLD file editors

8. OGC services
  - WMS
    - what is WMS?
    - Operation types
      - GetCapabilities
      - GetMap
      - GetFeatureInfo
      - GetLegendGraphic
      - DescribeLayer
      - Exceptions
    - Output formats
    - Non-standard parameters
  - WFS
    - what is WFS?
    - Operation types
      - GetCapabilities
      - DescribeFeatureType

- GetFeature

- Transaction

- LockFeature

  - Output formats

  - Non-standard parameters

9. Filtering mechanisms

  - Available filtering languages

  - WMS and WFS layer filtering

  - Filters in symbolization

10. Users and security

  - User management through roles

  - Securing of access to OGC services and layers

11. Using the cache for WMS (GeoWebCache)

  - Generating and refreshing of tiles

  - Integration with external mapping servers and OpenLayers

12. Introduction to GeoServer management from the REST API level