

JADAVPUR UNIVERSITY
COMPUTER AIDED DESIGN CENTRE
Faculty Council of Engineering & Technology
Kolkata - 700 032

Certificate course on
WebGIS Development using OpenLayers

Prior to the advent of the Internet, GIS technology, like other software technologies, was limited to the domain of desktop, workstation; and in limited cases, server-based computing platforms. The physical restrictions of these computing platforms confined GIS to only supporting the evolution of project and departmental GIS and limited impact to the public. Over the last ten years the GIS community has become increasingly focused on the dissemination of GIS data and functionalities within, as well as outside of, organizations. An important breakthrough in this research was the deployment of GIS data, functionality in the Internet, World Wide Web, and private intranets; and is sometimes termed as WebGIS or Web Mapping Application.

OpenLayers is a powerful, community-driven, open-source, JavaScript-based web mapping library, which allows us to develop web mapping applications using a great number of geospatial data sources, data formats, and open geospatial standards such as from the Open Geospatial Consortium (OGC).

This course focuses on the latest version of the Openlayers 6. It starts with very basics and goes all the way to advanced concepts. Once we master all the Openlayers concepts, we build a complete Openlayers project in the last section. At the end of this course, one would be able to build amazing web mapping applications using Openlayers.

The CAD Centre is the pioneer institute in the field of Geoinformatics. It maintains a state-of-the-art infrastructure for its courses. The Centre has engaged highly experienced faculty members from academic sector as well as industry. Some of our faculty members are well known figures in the field of Geoinformatics and have published huge number of books, monographs, and research articles internationally.

Course Duration : 24 hrs.

Class Duration: Theory Sessions: 2 hrs each; Practical Sessions: 2 hrs each

Eligibility : Graduate/undergraduate students of any discipline, and GIS (Geographical Information System) professionals who want to learn web mapping using OpenLayers.

Participants must have mobile devices running Android 4.0.3 or above; laptop/desktop computer with Windows; and stable internet connectivity. Google Meet should be preinstalled in the mobile device.

Syllabus:

Topic	No. of days	No. of hours
Introduction to Openlayers library, Setting up the environment, and prepare first web map.	1	2
Introduction to key concepts and components of Openlayers such as views, layers, overlays, map interactions, and map controls.	1	2
Raster layers including Tiled Raster Layers, Raster Sources, Tiled ArcGISRest, TileWMS, Static Raster Images. Managing Multiple raster layers	2	4
Vector layers including Vector Tile Layers, Vector Image Layer. Interacting with Vector Layer Features	2	4
Styling Vector layers including styling of points, lines, and polygons, using images as point symbols, styling based on feature properties	1	2
Interactions in Openlayers, Controls including styling and manipulating map controls.	2	4
Geolocation API (Application Programming Interface)	1	2
Project	2	4
Total	12	24

Certificate: Completion certificate (in printed form) will be provided at the end of the course.