

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

Certificate course on  
Essentials of QGIS for Teachers and Research Scholars

QGIS is the most popularly used free and open source GIS software application available. Interest in using QGIS as an alternative to proprietary GIS software is growing rapidly. Many universities and colleges are including this software in their syllabi. Therefore, it became essential to learn this software for the teachers and research scholars.

This course has been designed to cover the undergraduate and post graduate syllabi of several universities. Practical sessions have been emphasized with brief theoretical discussions. It is hoped that the teachers and researchers would be greatly benefited from this course. Although the course has been designed keeping the requirements of college and university teachers in mind, this will equally serve the requirements of students and practicing professionals.

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:** 30 hrs

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

**Eligibility:** BE/BTech in Engineering or equivalent; BSc in any discipline; BA/B.Sc. in Geography/Environmental Studies; 3-years Diploma in Engineering. All should have basic knowledge of remote sensing and GIS.

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:**

Topics	No. of Theory Classes	No. of Practical Classes	Total No. of Classes
Introduction to QGIS, QGIS Interface & plugins concepts, Brief discussion on Preprocessing techniques	2	-	2
Georeferencing image to image and image to ground	-	1	1
Georeferencing using Google map & Discussion on Image Enhancement	1		1
Image Enhancement and Raster styling	-	1	1
Vector data creation, editing and manipulation, attribute creation and data entry, import/export shapefile to kml.	-	1	1
Convert CSV/excel file to vector layer, coordinate extraction, join external excel file with vector layer, coordinate transformation, Advanced feature modification tools.	-	1	1
Attribute & spatial query, area/perimeter/length extraction from features, field calculation/statistics etc.	-	1	1
Different types of Geoprocessing analysis on vector layers	-	1	1
Thematic map, label, chart/graph and layout/map making etc.	-	1	1
Raster Interpolation & Terrain Analysis (DEM creation, contour making, Slope & Aspect, hillshade)	-	2	2
Theoretical Discussion on Image Classification	1	-	1
Semi Automatic Image classification	-	1	1
Clustering and post classification analysis	-	1	1
Total	4	11	15

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