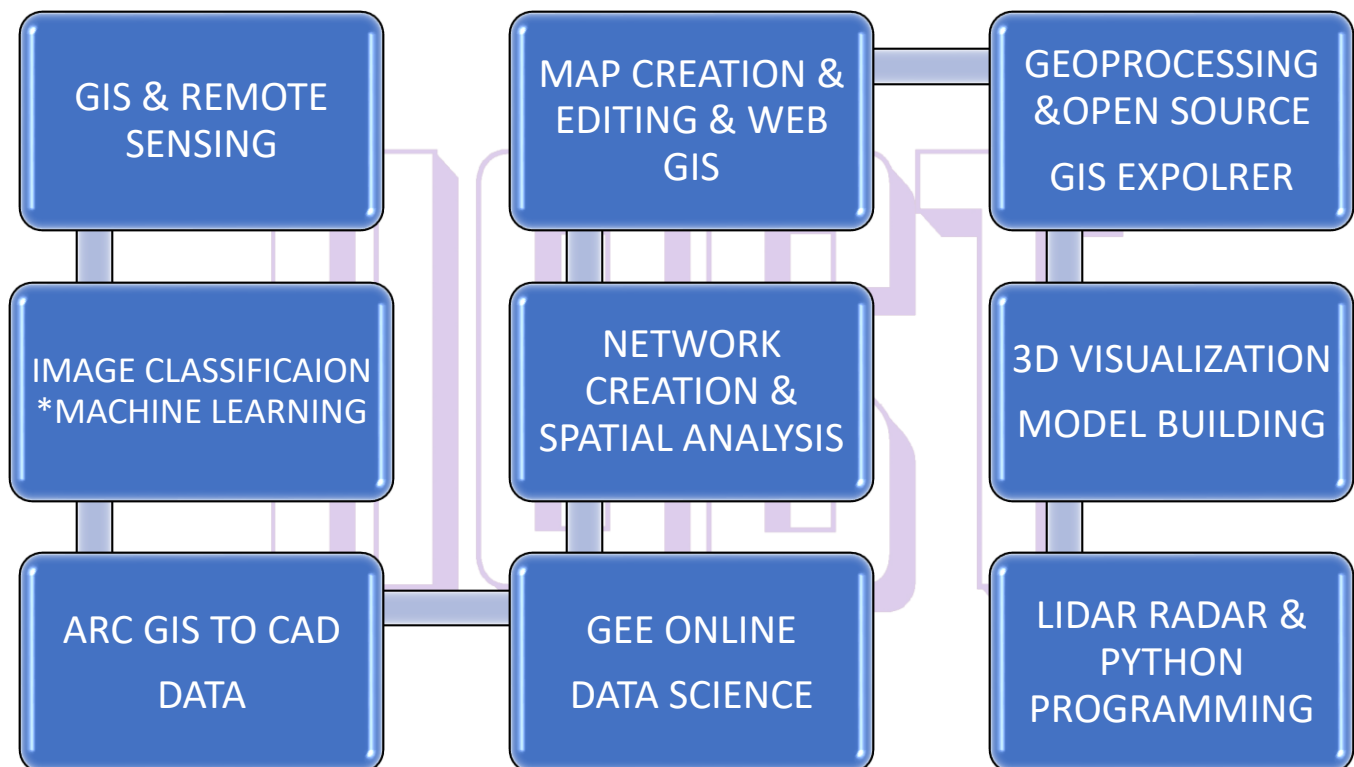


3 months Professional Certificate course on
ADVANCED GIS & SPATIAL ANALYSIS

by

IIGST

Course Outlines



QGIS

- Introduction to remote sensing, • database and GIS theory • map projections
- Introduction to geographical information system & open source GIS software
- Types of geoprocessing tools & plugin
- QGIS “plugins” and their applications: gdal library tool, georeferencing, coordinate capture, format converter.
- Perform georeferencing in q-GIS,
- Coordinate system assign coordinate system to a data in q-GIS

- Working with vector data and tables, operations with vector and alphanumeric data.
- Create new shape file, vector data and how to create or delete field in attribute table in q-GIS
- Use of smartphone gns app to collect absolute location
- Image reGIStration & vector layer mapping & editing in q-GIS
- Image classification types , class editing , post classification analysis
- How to import csv file to attribute file in q-GIS
- Integration of Google earth engine plugin to q-GIS
- Thematic mapping, editing and layout preparation in q-GIS
- Spatial and attribute query in q-GIS, creation of points and buffer in q-GIS
- Explore data management tool and research tool in q-GIS
- Preparation of reflectance libraries of LULC features across different image bands using qGIS
- Integration with grass GIS
- QGIS with python consolation

Google Earth Engine

- Overview of Google earth engine (what is Google earth engine? > • how we will have used this technology? > • which language use this software? > • different type of cord . Play with image bands > • reducing image collections using ndvi function in aoi)
- Introduction to Google earth engine code editor
- Working with raster data using Google earth engine
- Working with vector data using Google earth engine
- Applications of gee – water quality mapping & change detection
- Common operations * image filtering ,image collection & classification in gee
- Master JavaScript programming language to process earth observations data
- Agricultural water management & drought monitoring using gee
- Water bodies extraction using NDVI and NDWI using gee
- Semi-supervised landcover classification using gee
- Overview of Google earth studio
- Gee online vs Google earth pro
- Flood mapping & monitoring using gee,
- Extraction of bathymetry using gee and python
- Extraction of water quality using gee and python
- Javascript tutorials in gee
- Gee & python scripting

ArcGIS

- Starting Arcmap And Arccatalog
- Georeferencing raster images + projections + co-ordinate systems with arc GIS
- Opening map documents setting map document properties and options
- ArcGIS feature classes and layer files data view and layout view
- Moving around a map and making measurements
- Adding spatial data to an existing feature class • adding text attributes to an existing feature
- Modifying an existing feature class • creating a new feature class • labelling •
- Managing GIS data with arc GIS * spatio temporal analysis with geoprocessing tools
- Using attribute tables • complex graphic objects – merge, split and intersecting of features

- Labelling and annotation • selecting objects using attributes (sql) • field calculations • hyperlinks • creating buffers
- Vector data model editing and creating mapping info.
- Importing data from other applications • creating thematic maps saving and applying symbology • creating a map template and printing a site
- Getting to know arc GIS online
- Database management with arc GIS
- Programming ArcGIS with python (fundamentals of the python language for ArcGIS)

IGST