

## **GIS – 874: Web GIS (3+0)**

1. **Course Objectives:**

To enable students to develop a basic and advanced understanding of Web GIS.

2. **Course Outcomes:**

Understand the advanced concept of Web GIS.

3. **Course Code:**

GIS – 874

4. **Credit Hours:**

- a. Theory = 03
- b. Practical = 00
- c. Total = 03

5. **Detailed Contents:**

- a. A running history of web GIS technologies
- b. Nature and specification of Google API
- c. Open Layers and Post GIS: Why they matter?
- d. ArcGIS Server: Market standing and advantages
- e. Mobile and Web-GIS: Benefits
- f. The Golden GPS in cell phones: Mining it!!!
- g. Mobile Application development and the web
- h. Geo-Sever: Introduction, uses and OGC compliance
- i. Benefits of OS Computing GeoServer and MapServer
- j. From a drawing to Map (Cartographic theory)
- k. Understanding WMS and WFS: Preferences
- l. Geographic data encoding and GeoJSON
- m. PostGIS: History, Utility, and Advantages
- n. Publishing websites: Technical session
- o. Presentations: Term Projects

6. **Detail of Lab work, workshop practice, if applicable:**

- a. Installing and configuring Geo-Server on Linux
- b. Exploring the administrative interface, manual config.
- c. Accessing Layers, WMS and WFS
- d. Parsing GeoJSON (GeoServer and QGIS)
- e. Setting-up Post-GIS
- f. Importing and managing Shape \_les
- g. Importing and managing Rasters
- h. Layer styling in Geo-Server
- i. Creating simple maps using Geo-Server
- j. Integrating with OpenLayers
- k. Task and performance optimization
- l. Publishing your Geospatial/project site

7. **Textbooks/Reference Books:**

- a. Westra, E. (2016). Python geospatial development. Packt Publishing Ltd.
- b. Obe, R., & Hsu, L. (2011). PostGIS in action. GEOInformatics, 14(8), 30.
- c. Mitchell, T. (2008). Web mapping illustrated: Using open source GIS toolkits.
- d. O'Reilly Media.

- e. Davis, S. (2007). GIS for Web developers: adding where to your Web. The Pragmatic Bookshelf, Lewisville.