Introduction to GIScience (Practical)

Course Contents:

1. Evolution of GIScience, Institutions and GI data sharing, GIS: Definition and Components
2. Global Positioning System (GPS) – Principles and Uses
3. GIS Data Structures: Types (spatial and Non-spatial), Raster and Vector Data Structure.
4. GIS Data Analysis: Input; Geo-Referencing; Editing, Query
5. Application of GIS: Land Use Mapping; Urban Sprawl Analysis; Forests Monitoring

References:

Essential:

1. Bhatta, B. (2010. *Analysis of Urban Growth and Sprawl from Remote Sensing*. Berlin Heidelberg, Germany: Springer.
2. Burrough, P.A., and McDonnell, R.A. (2000). *Principles of Geographical Information System-Spatial Information System and Geo-statistics*. UK: Oxford University Press
3. Chauniyal, D.D. (2010). *Sudur Samvedanevam Bhogolik Suchana Pranali*. Allahabad, India: ShardaPustakBhawan.
4. Jha, M.M. and Singh, R.B. (2008). *Land Use: Reflection on Spatial Informatics Agriculture and Development*. Delhi, India: Concept Publishing.
5. Kumar, D, Singh, R.B. and Kaur, R. (2019). *Spatial Information Technology for Sustainable Development Goals*. Delhi, India: Springer.

Suggestive:

1. Heywoods, I., Cornelius, S and Carver, S., (2006). *An Introduction to Geographical Information syste.* New Jersey, USA: Prentice Hall.
2. Nag, P. (2008). *Introduction to GIS*. New Delhi, India: Concept India.
3. Sarkar, A. (2015). *Practical geography: A systematic approach*. New Delhi, India: Orient Black Swan Private Ltd.
4. Singh, R.B. and Murai, S., (1998). *Space Informatics for Sustainable Development*. New Delhi, India: Oxford and IBH.