GIP 455: GEOMORPHOLOGY AND GEOSTATISTICS (Lab S)

Skills, employability and entrepreneurship: Studying these courses will help to students learn to analyze and create thematic maps about landforms, geomorphological maps. The SPSS software is helpful to create and model for geospatial databases. Students learning these courses develop skills which are useful to work in geomorphological and environmental research laboratories of both private and government sectors.

	Geomorphology
1.	Morphometry of drainage basins. Analysis of drainage patterns and orientation structure.
2.	Preparation of DEM from topographical maps, ASTER and SRTM data.
3.	Preparation of Aspect, Shaded relief, and Slope maps from DEM.
4.	Interpretation of longitudinal and cross-valley profiles.
5.	Generation of geomorphologic maps showing fluvial, coastal/marine, denudational, volcanic and glacial land forms.
6.	Exercises related to measurements of runoff dynamics and sediment dynamics.
	Geostatistics
1.	Quartiles, Deciles and Percentages
2.	Measures of Dispersion
3.	Skewness and Kurtosis
4.	Students T test
5.	Regression and Multiple linear regression
6.	**SPSS**: Introduction to SPSS. Use of SPSS in creating a database. Applications of SPSS in Correlation Co-efficient. Use of SPSS in Linear Regression. Modeling and Prediction. Application of SPSS in GIS data modeling.

GIP 456: GIS AND DBMS (Lab S):

Skills, employability and entrepreneurship: This course is provides students with knowledge about creating number of basic and thematic maps. There is a good scope of this course where students can work as geoinformaticians and as well as data operators in disaster management sectors, government institutions, various organizations, research institutes and MNCs. Students can also open their own start-up company.

	GIS
1.	Geo-referencing – image rectification based on co-ordinate system. Onscreen digitization
2.	GIS and Remote Sensing data integration: Integration of vector and raster data (linking of spatial and non-spatial data)
3.	Extraction of Thematic maps: preparation of thematic layers-on screen from toposheets, images - Road, Settlement, Drainage, LU/LC etc.