**CE677A: Geospatial Data Processing** **3-0-0-0 [9]**

**Course Contents:**

Geodetic reference systems: ICRF and ITRF, Geodetic datums, Earth ellipsoid; basic geometric geodesy; Coordinate systems and transformation; Map projections, geoid and geoidal heights and undulations; Observations and mathematical model, precision and accuracy, rejection of observations, weights and cofactors, correlation and covariance, propagation of errors and variance covariance; Least squares adjustment computations; Sequential processing and Kalman Filtering; Variance covariance of adjusted data, error ellipse and error ellipsoid; Statistical analysis of adjusted data; Introduction to GPS; Code and phase measurements; Models for single point positioning and relative positioning using code and phase data; Methods of interpolation; Geo-statistical tools: variogram and krigging.