| GIP 506: DIP AND COMPUTER PROGRAMMING (Lab S) | |
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| **Digital Image Processing Lab** | |
| 1. | ERDAS Imagine |
| 2. | Geometric Correction |
| 3. | Radiometric correction |
| 4. | Histogram construction for digital data |
| 5. | Outputs of linear and non-linear stretch |
| 6. | Filtered outputs |
| 7. | Ratio images |
| 8. | Changed detection analysis |
| 9. | Image classification based on digital values |
| 10. | Unsupervised and Supervised classifications. |
| **Computer Programming  Lab** | |
| 1 | Applications of C++ programming in Geoinformatics. Programs to illustrate use of classes, objects in processing/performing Geoinformatics related tasks. |
| 2 | HTML: Introduction to WEB and its Applications in Geoinformatics. Creation of web pages. Use of HTML text formatting tags, Hyperlinks, Image stags. |
| 3 | Application of Java to Geoinformatics data. Creation of Java programs and applets. Embedding applet tags in HTML. |

| GIP 507:  RS AND GIS IN WATER AND MARINE RESOURCES (Lab S) | |
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| **Water Resources Lab** | |
| 1 | Delineation of river catchments on satellite image. Quantification of Lakes/Reservoirs, Water Bodies from satellite data and toposheets. |
| 2 | Evaluation of various drainage morphometric parameters for watershed characterization. Identification of Drainage Patterns, Computation of Stream Density, Stream Frequency, Ruggedness Number etc. |
| 3 | Creation of flow direction, flow length, flow accumulation in a watershed based on contours using Arc GIS. |
| 4 | Generation of Groundwater potential zone mapping, Isohyetal map generation and interpretation, Generation of Theissen polygons, Precipitation contours. |
| **Marine Resources Lab** | |
| 1 | Instrumentation in In-situ collection of Oceanographic Data: Secchi Disc, Water Samplers, Grab Samplers, Anemometers, D. O., Salinity, pH meter. |
| 2 | Construction of Chlorophyll-a, SST, Depth, Salinity, Biomass, Total /Suspended matter, using interpolation techniques in ArcGIS. |
| 3 | CRZ mapping using topographic sheets, Hydrographic charts, Air photographs, Digital data products. |
| 4 | Mapping of coastal features like riverine, beach, tidal flat, rocky and sandy shore environments from satellite images, topo-sheets and hydrographic charts. Identification & Interpretation of Oceansat, Modis, and other Oceanographic Satellite Images. |