A total station is a surveying instrument used to precisely measure both horizontal and vertical angles, as well as distances between points, allowing surveyors to calculate coordinates and create detailed maps by combining an electronic theodolite with an electronic distance meter. It's commonly used in engineering and research projects to collect data.

RTK GPS is a technology that utilizes fixed base stations to send real-time corrections to a GPS receiver, significantly enhancing its accuracy from meter-level to centimeter-level precision, making it ideal for applications requiring high precision positioning like surveying, construction staking, and precision agriculture.

Land Surveying Lab and Instrumentation

The Department has a full fledged land surveying Lab equipped with latest instruments. The surveying laboratory has three sections: the first is for ground surveying instruments and its accessories, the second is for aerial photogrammetry, and the third is a computer lab for Remote Sensing and GIS software applications with latest software's and satellite imageries. The lab is equipped with total stations, theodolites, digital levels, GNSS receivers, and other surveying equipment, and scanners. These instruments are used for measuring angles, distances, and elevations, as well as for establishing control points and mapping features on the ground. All the equipment are at the latest versions and manufactured by the most famous companies known in this field, Leica, Topcon, Sokkia, Zeiss, and Kern. The faculty and scholars have used the lab instruments for a number of national and state projects including the detailed surveying of the University Campuses.

Differential GPS, Model: TRIMBLE GEO XT

Differential GPS (DGPS) is an effective system for eliminating or significantly reducing the biases in GPS observations. It is used to enhance the quality of location data gathered using global positioning system (GPS) receivers. The instrument has lot of applications in the fields of Geography, Mapping, Terrain modeling, etc.

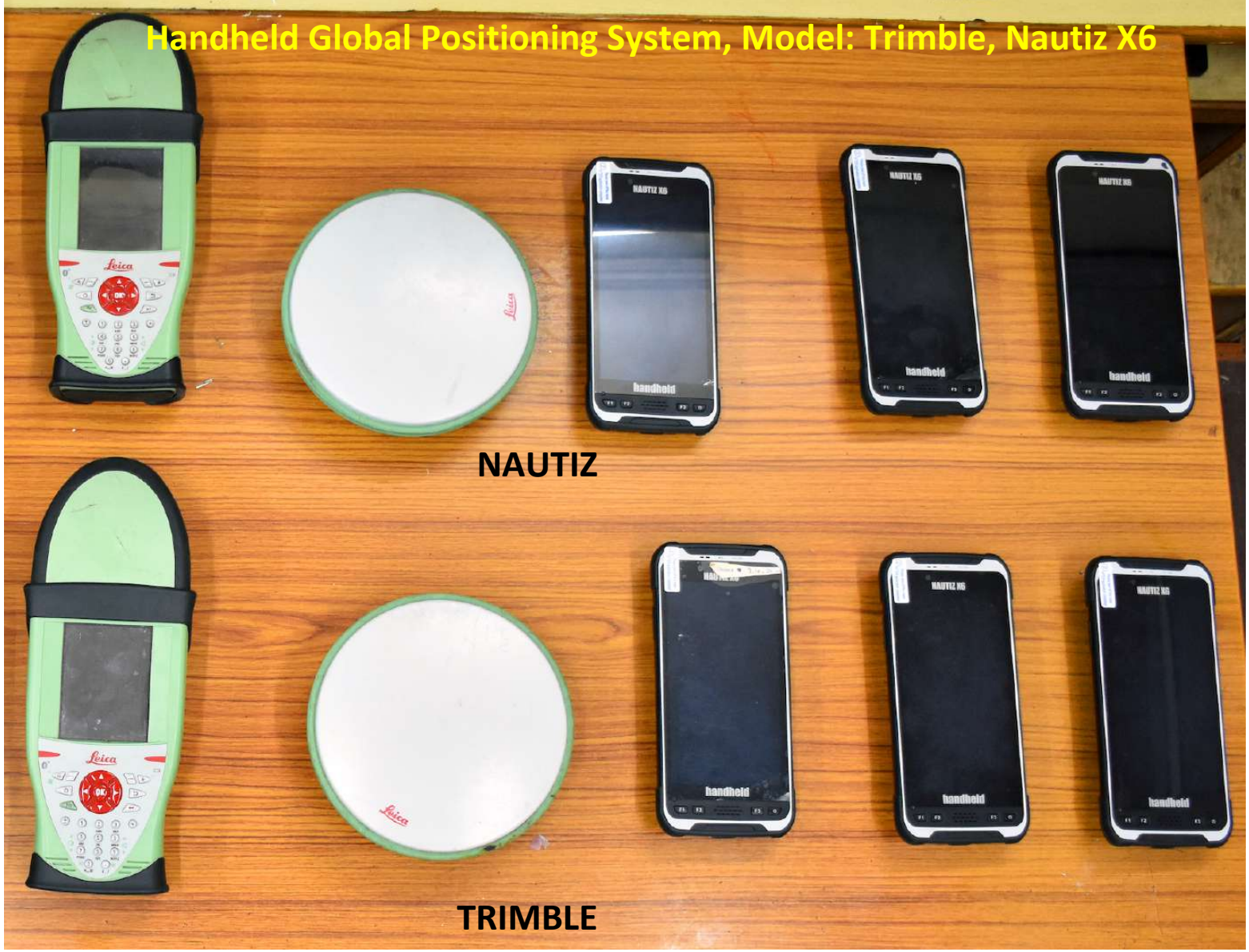
HP PLOTTER, **Model: DESIGNJET Z6200**

This high quality printer-sum-scanner of A0 size has 32 GB memory and 160 GB internal storage. It prints high quality images Up to 2400 x 1200 optimized dpi using HP Thermal Inkjet. Software included is HP Instant Printing, HP DesignJet Click, HP Utility for Mac and Windows. The printer has lot of applications such Backlit signs, rollup banners, and canvases, CAD technical drawings for architecture, engineering, and construction professionals.

Water quality meter measure a number of parameters, including pH, conductivity, and dissolved oxygen, nitrates, etc. in situ. The instrument is calibrated properly with the standards in ensuring accurate water quality measurements.

The students and scholars measure several critical parameters in different water types such as drinking, industries, wetlands, etc. The portable meter is used for quality testing of water in research and development. This instrument allows for more comprehensive data collection.

A sieve shaker shakes a stack of sieves placed in order, so that particles get mechanical separated according to their sizes. A laboratory incubator shaker creates a controlled environment to determines the grain size distribution of soils. It is commonly used and has huge applications in teaching and research in the fields of watershed management, hydrology, flood modeling, soil analysis, etc.



The Global Positioning System (GPS) has many uses, including navigation, mapping, tracking, and timing. GPS is used in many industries and applications, including transportation, surveying, agriculture, and emergency response. It is used to collect geographical location of data points during the field surveys for spatial analysis purposes.

CPR Manikin Model: KKI207

A CPR Manikin is a type of high-fidelity simulated human patient used in healthcare training scenarios to practice CardioPulmonary Resuscitation (CPR) techniques. The instrument is used to impart training to the students and enhance the skills for life, education, and capacity building of young people.

The manikins simulate blood flow to the brain using LED light feedback. They help the student/ communities learn how to respond in real-time emergencies correctly. This gives them the confidence and the skills to provide more effective CPR.

Interactive display is a touch-sensitive screen used to write, draw, and navigate content directly on the display. Multiple people can interact simultaneously on the screen, making it ideal for brainstorming sessions and group work. It usually integrates with various applications like PowerPoint, documents, and web browsers. It is attached with a high resolution camera with viewing angle of 178 degrees. The Display Resolution is 4K UHD (3840 x 2160 pixels).

LCD (liquid-crystal display) projectors are installed in every class room of the department. Teachers use LCD projectors to show videos in class. For example, they can show a documentary on YouTube, a movie on a DVD or a self-produced video taken on a field trip. They have multiple uses **in Teaching such as** Create Multi-Media Lessons, Expand Student Presentations, Share Lessons, Host Events, etc. LCD projectors allow images to be projected in a crystal clear format. This means that images be seen by all students in a lecture theatre or classroom, no matter the size of the room.

Remote Sensing, GIS and Advanced Surveying Lab with Computer and Software

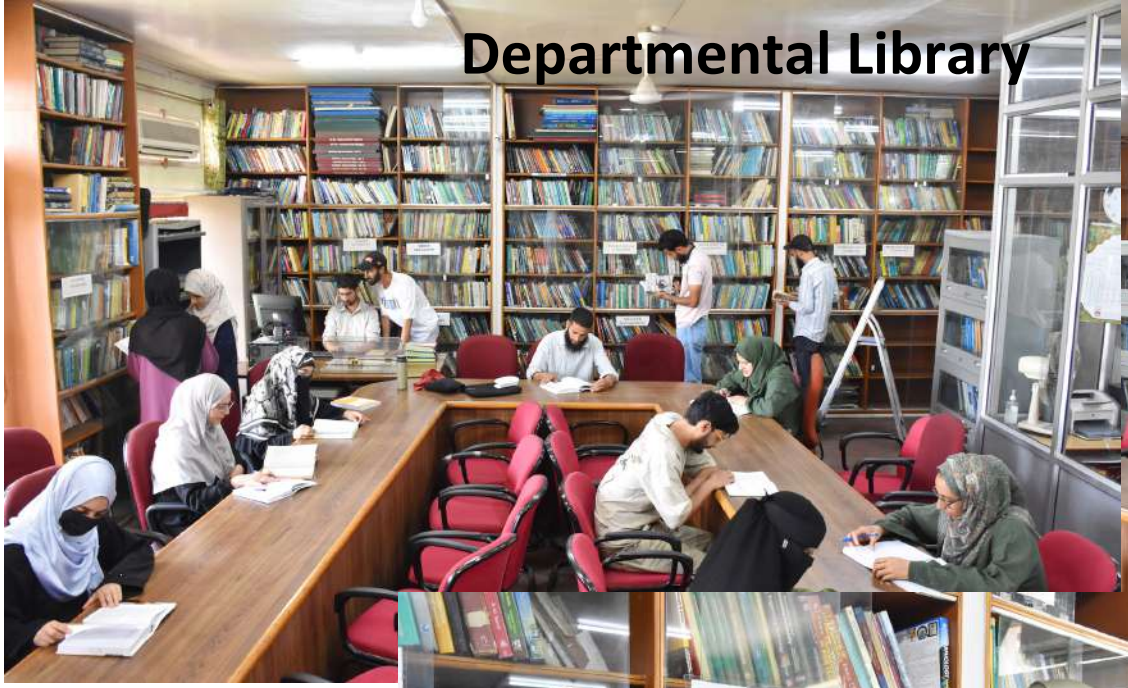
Remote sensing technology is used to extract information from satelite images through several processes such as image processing, photogrammetry, and spatial modelling. The students are provided with skills in licenced and open-source softwares suchs as ERDAS, ArcGIS, QGIS to create maps, analyze data, and interpret the. The knowledge gained on RS and Geographic Information System (GIS) helps them to gain knowledge about variety of purposes, including mapping, data management, geoprocessing, spatial analysis, data visualization, and job seeking. The laboratory has lot of applications in teaching and research in the fields of grography, disaster management, and other branches of Earth Sciences.

Departmental Building

Teachers in Action in Class Rooms

Research Scholars Room

Departmental Library



Librarian

Students searching Knowledge

The department is equipped with a well-maintained library with a collection of around 8000, which includes reference books, award-winning books, books by Nobel laureates, research books, journals and memoirs and P.G., M.Phil., Ph.D. theses. The library is maintained by well-trained staff who assist the students in finding the relevant books and keep the record of the issued books.

Fire Extinguisher Equipment

A department is well equipped with instruments to deal with untoward incidents such as fires. The building has many such safety equipment's such as revolutionary fire balls, refillable fire extinguishers, and sand buckets that works by activating dry chemical powder when it comes into contact with a flame. The automatic ball-shaped device can be thrown directly into a fire to extinguish it at the initial fire. The harmless powder is non-toxic, eco-friendly, and safe for humans and animals.

Waste Management System

The department is well equipped with color-coded dust bins for the effective management of generated waste. The dust bins are cleared daily and the waste is segregated at the source which helps the University in proper and effective waste management processes such as Reuse and Recycle so as to make the Campus pollution-free.