

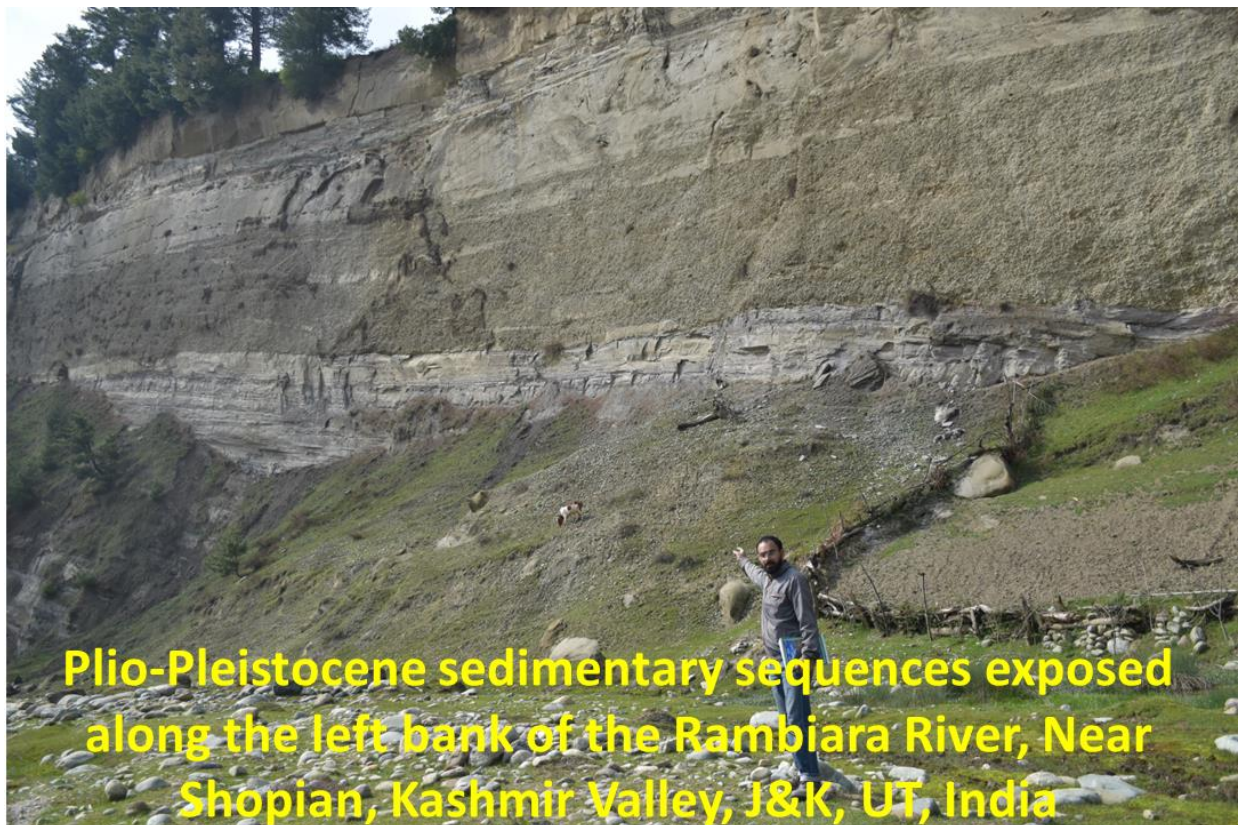
# BEST PRACTICES



**Department of Earth Sciences, University of Kashmir**

## **1. TITLE: FIELDWORK**

Plentiful field studies are required for geology because it is a field-related discipline, and the more rocks you see, the more proficient a geologist you become. It is such an experience which cannot be taught in the classroom. Through this students can acquire professional skills necessary for employment and other future endeavors.



As such fieldwork forms an indispensable part of the course curriculum at the Department of Earth Sciences. The main motive behind this is that the students get practical experience that allows them to apply the theories and knowledge they have studied in the classroom to real-world scenarios. Besides, the field work being a teamwork, fosters great connections among the students. The department imparts geological field training to students during the first two semesters of the M. Sc. Applied Geology program, comprising one local and one national geological field tour. The students then apply this knowledge during their 3<sup>rd</sup> and 4<sup>th</sup> Semesters to solve various geological problems by opting for dissertation and project works followed by report submission and PowerPoint presentation of the observations and inferences before the expert committee.

### **1.1. Sub-title: LOCAL GEOLOGICAL FIELD TRAINING**

The students learn about various basic things like lithologies, economic minerals, geological structures, geomorphic landforms, and tectonic setup of the Kashmir Valley/Himalaya during the week-long (7-day) local geological fieldwork in the first semester of the MSc program.



*Students discussed the PT boundary (left photograph) with the expert during the local geological fieldwork to PT section, Guryul Ravine, Srinagar. The visit of students to the under-construction tunnel for hydroelectricity generation at Uri, Baramulla (right photograph).*

In addition, they learn how to make maps, prepare sketches, take relevant photos to record observations, use field equipment, such as GPS and Brunton compass, synthesize findings, and create a thorough field report.



*Glimpses of the geological fieldwork of various batches of MSc Applied Geology 2<sup>nd</sup> Semester to various representative geological sites from 2019-2023 in the Kashmir Valley.*

At the end of the local geological fieldwork, the students submit their field report to the department and present the same in the form of a PowerPoint presentation before the faculty members and experts. During the presentation, the experts give their inputs which help students strengthen their acquired skills during the fieldwork and report writing.

## **1.2. Sub-title: NATIONAL GEOLOGICAL FIELD TRAINING**

During the second semester of MSc Applied Geology, the department takes students outside the J&K, UT for fieldwork for three to four weeks. The students get the opportunity to see the geology of the rest of the country. They get chances

to visually see the different geological rock formations formed under different geological conditions. The students visit mining sites and get acquainted with the techniques in ore finding and ore extraction, the backbone of modern industries. The students interact with the geological faculty of various universities and geologists from various prestigious organizations like the Geological Society of India, Geology and Mining, ONGC, etc.



*Glimpses of the National geological fieldwork of various batches of MSc Applied Geology from 2019-2023 to various geological sites across various states and their interactions with the experts from various universities and GSI.*



*Students of MSc Applied Geology Batch 2021 interacting with GSI scientists and other staff at GSI centre Jammu.*

## **2. TITLE: STUDENT PRESENTATIONS**

The students are also given opportunities to participate in classroom presentations during all four semesters of the MSc program. Students prepare topics of their own choice or the topics assigned to them by the course teacher. Such activities help improve their public speaking skills and build confidence in lecture delivery. This also helps the concerned teachers to find out the weak areas where a particular student/s requires help for improvement.

## **3. TITLE: DISSERTATION CUM PROJECT WORK**

In the third and fourth semesters of the MSc Applied Geology program, the students opt for dissertation work and apply the methods and techniques learned in the classroom and during the local and national geological fieldwork. At the very outset, the students are asked to give their choice in choosing the topics and supervisors for their dissertation/project work. This is followed by the synopsis preparation and presentation of the topics chosen, methodology and objectives to be achieved. During the presentations, the faculty members/observers give their inputs/suggestions regarding the topics chosen and the approaches for achieving the objectives of the dissertation/project work, if any. Such activities help to sensitize students to a research culture. They also learn techniques like literature surveys, sampling, data collection, photographic documentation, report writing, etc. They then polish their report-writing abilities and lecture-delivering skills by submitting a field report to the department and PowerPoint presentations respectively before the faculty members. The students quite often publish their work in peer-reviewed journals which is a testimony to the hard work the department puts in molding the students during the MSc program.

#### 4. TITLE: OUTREACH

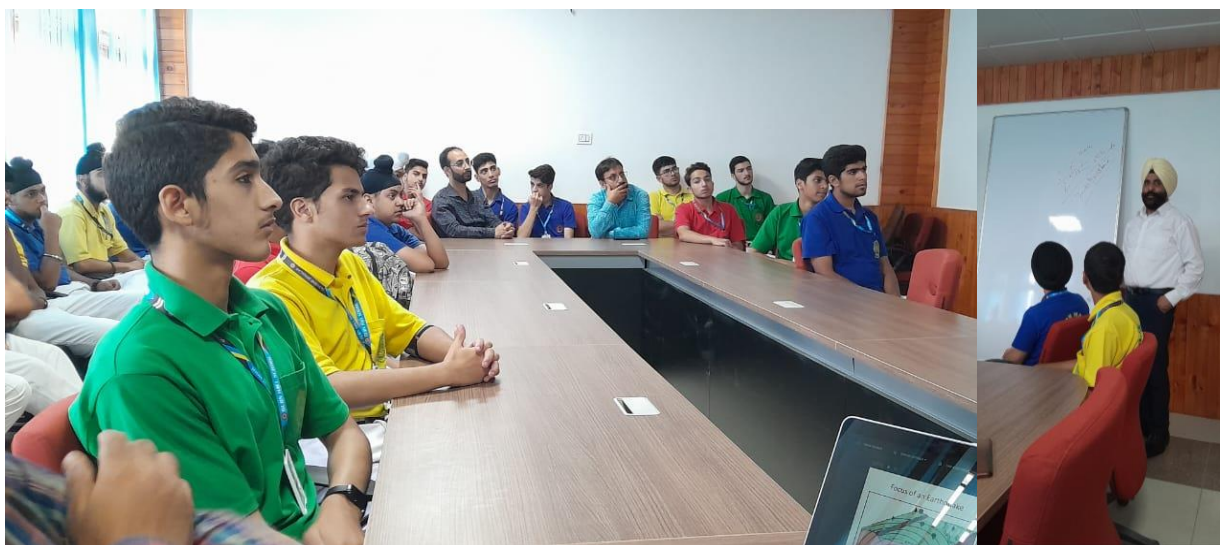
Over the years the faculty members of the Department of Earth Sciences, University of Kashmir are involved in various outreach programs. The department is known for its excellence and dedicated efforts to popularize earth sciences among students of Kashmir University and also from the students of various schools, Higher secondary, and colleges across the valley and outside.



*Glimpses of the visit of students of Candles Garden Educational Institute Gundjahangir Sonawari, Bandipora Kashmir to the Department of Earth Sciences.*

It is always a great experience to spend time with the students from various schools and Higher education departments outside their classroom walls. It is a sort of experimental learning essential to foster personal and social development and teach practical thinking to students in their early careers.

The department is committed to inspiring, encouraging, and empowering young generations towards the betterment and sustainable development of the Earth. The department has collected an exquisite collection of minerals, rocks, and fossils during their local and national field tours and has kept them at various appropriate places in the geological museum and rock garden of the department for display. Every year students from various schools and colleges visit the department, see the geological museum and rock garden, and interact with the faculty and scholars of the department. The faculty members of the department constantly ensure that students from various schools and higher educational institutes feel comfortable and converse with them about different facets of Earth. The efforts of the department primarily center on inspiring and stirring the hearts of the kids to prepare them to play a significant part soon in protecting and wisely using the diverse earth resources for the upkeep of the natural balance and environmental improvement.



*Head Department of Earth Sciences, Prof. Bikram Singh interacted with the students from Burn Hall School, Srinagar during their visit to the Department of Earth Sciences.*



*Photograph taken during the visit of the students and faculty of the Govt. Higher Secondary Hagman, Sopore, Baramulla to the Department of Earth Sciences.*



*A faculty member from the Department of Earth Sciences, Interacting with the students and teachers of IPTS Heights School, Khan Sahib Budgam*

Recently a faculty member from the Department of Earth Sciences accompanied the students of IPTS Heights School, Khan Sahib to the nearby geologically rich area. The Khan Shaib area in District Budgam of J&K UT is a natural laboratory of various geological landforms and is best suited to beginners/school children wherein they discover why, when, and how such features have come into being. The area had been modified by glacial activity during the geological past. After giving them a brief introduction to the area, the students were



enthusiastic about learning about various surface features of the earth and the processes and causes behind the formation of picturesque landscapes. Students inquiries regarding the rocks, landscape, and river morphology, glacial geomorphology during their field trip with the geoscientist demonstrated the importance of experiential learning in addition to traditional classroom instruction. The students began to learn about concepts practically, came up with original ideas, looked for answers, and attempted to make sense of the environment. In the end, it comes down to the fact that early in a student's career, practical or field experience can be transformative and encourage students to pursue a variety of occupations.



***A faculty from the Department of Earth Sciences, interacting with the students of Govt. Primary School Wanihama.***

In continuation of its outreach a faculty member interacted with the students of Govt. Primary School Wanihama, Srinagar. The Wanihama Village is located just 3-4 km from the University of Kashmir, Srinagar. The sedimentary section exposed near the Wanihama school has preserved the imprints of the last glacial period climate changes in the form of loess and paleosols. The students were sensitized about the importance of these sedimentary sequences so that they get a sense of belonging towards the preservation of these valuable archives right from early schooling. The students were enthusiastic about learning the climatic importance of the sediments which they regularly see during their visit to the school and expressed their will to safeguard these priceless geo-archives.