

EXECUTIVE SUMMARY

The Department of Geology, Khushal Khan Khattak University, Karak, is a department of graduate studies and research in geosciences, established in 2014 with an aim to create professionally trained man power to explore of natural resources and assess natural hazards to mitigate these hazards. This department conducts research on different aspect of geosciences like hydrocarbon and mineral exploration. Subsurface imaging and geophysical equipment are used for hydrogeological, minerals resources exploration and exploitation. This department is a part of the well-equipped 'Energy Studies Centre of the Khushal Khan Khattak University, Karak'.

The department offers BS program in Geology every Fall semester (September). Currently enrolled students are 22, 22, 12 and 13 students in 1st, 3rd, 5th and 7th semesters respectively. The department is set to launch one year post graduate diploma in Geographic Information System and Remote Sensing (GIS & RS) in Fall-2025.

It is a matter of pride for the department that it has been successful in the pursuit of the aim and objectives for which it was established. The curriculum was designed by the faculty members of the department in the light of HEC 2018 curriculum and 2023 undergraduate policy. The curriculum and course contents of the degree were recommended by the Board of Studies members from different reputed and established organizations. The suggested recommendations were incorporated accordingly. The Board of Studies comprises of the Head of the Department as convener and four senior faculty members, along with prominent researchers and experts from academia and industries.

The Department of Geology is in the developmental phase, it has four well established research labs namely mineralogy and petrography lab, rock cutting and thin section preparation lab, RS (Remote Sensing)-GIS (Geographic Information system) lab, recently established Geochemistry and geophysics labs. Students of 8th semester are currently involved in the research projects related to different aspects of geosciences. The research topics cover solution to some key problems including energy, water and environment. The faculty members are also pursuing some research topics of applied nature for their academic and professional growth.

The curriculum design is based on the approved criteria. The academic and co-curricular activities are annually scheduled in accordance with academic calendar. Basic facilities are available for students and faculty like petrography, structure geology, geochemistry, GIS and RS and Geophysics. However, improvements in the labs are required for further technical advancement, in order to keep pace with the global research techniques.

Assessment of the institutional facilities is done through laboratories, library, administration, infrastructure, class rooms and faculty offices. There are some minor shortcomings and limitations which are hopefully in line for upcoming projects.

Following suggestions are put forth for the improvement of this department:

- The department of geology needs latest geological equipment (XRD, XRF, and SEM/EDX) for state-of-the-art research in order to keep pace with the research in developed countries.
- The latest geological and geophysical software (Arc GIS, Techlog, Petrel, 2D/3D Move, Kingdom) needs to be acquired with academic licenses in order to get students trained for national and international organizations.