





Course Brochure

Global Initiative of Academic Networks (GIAN) International Course-2025 On

The Growth and Collapse of Orogens and the Exhumation of Deep Seated Rocks in the Himalayas

October 13-17, 2025

Organized by



Department of Geology, Panjab University, Sector 14, Chandigarh, 160014, India

1

Course Coordinator(s): Dr. Mahesh Thakur

Prof. Gurjaspreet Singh

: Principal Course Coordinator

: Local GIAN Coordinator

THE GROWTH AND COLLAPSE OF OROGENS AND THE EXHUMATION OF DEEP SEATED ROCKS IN THE HIMALAYAS

Overview

The aim of the course is to present an up to date knowledge of the Himalayan belt, the most famous collisional orogen in the world along with a focus on deformation and metamorphism of deep seated rocks with example from other ancient and modern orogenic belts. These rocks constitute the metamorphic core of the belt and several mechanisms of its exhumation has been proposed to now. The course will give an overview of the main exhumation mechanisms ranging from extension, extrusion channel flow and in-sequence shearing and their relation with erosion and climate with study examples derived also from other ancient and modern orogenic belt (Variscan and Alpine belts in Europe). The course will start by the observation and interpretation of tectonic structures in the field and at the microscale with the aim to join structural geology methodologies (stress, strain, kinematic of the flow) with petrology and petrochronology. Once tectonics structures and deformation processes, their P-T-t conditions and their timing are known an overview with a critical discussion of the exhumation mechanisms of deep seated metamorphic rocks will be performed. The interplay between erosion and tectonics with the help of numerical models.

Objectives

The primary objectives of the course are as follows:

- i) Exposing participants to the fundamentals of advanced techniques in Himalayan tectonics,
- ii) Building capability amongst the participants in the exhumation in different tectonic settings,
- iii) Providing exposure to practical problems and their solutions to participants for deformation, petrochronology and metamorphism
- iv) Enhancing the capability of the participants to apply strain and kinematics of high-strain shear zones.

Course	Date : Oct 13 - Oct 17
Duration	Number of participants for the course will be limited to fifty.
You Should	• Students at all levels (BTech, MSc, MTech, PhD) from reputed
Attend If	academic and technical institutions.
	 Faculty members from recognized academic and technical institutions. Professionals working in government and private organizations including R&D laboratories.
Fees	The participation fees for taking the course is as follows:
	Participants from abroad : US \$100
	Industry/ Research Organizations: INR 4000
	Academic Institutions: INR 2000
	Students: INR 1000
	The above fee include all instructional materials, computer use for
	tutorials and assignments. The participants will be provided with
	accommodation on payment basis.

To register Click here: <u>https://forms.gle/y4rYcWj57yRMiUuF6</u>

Bank Account Details for Fee Payment: Name - Local Coordinator GIAN (Prof. Gurjaspreet Singh) SBI Account No: 41435937793 IFSC - SBIN0000742 Branch- Sector-14, Panjab University, Chandigarh, India

No TA, DA will be provided to the participants. Participants have to arrange their own accommodation and food. *However, limited shared accommodation may be made available (subject to availability) in the Institute Executive Centre/ Guest Rooms of Hostels on request on first come first serve basis. Payment for accommodation & food is extra as per actuals.*

Last Date of Registration: September 1, 2025

About the Institute

Panjab University, Chandigarh, is an institution with a deep commitment to quality and excellence in academic pursuits. Established in 1882 as the University of the Punjab in Lahore (now in Pakistan), it was re-established in India in 1947, following the partition, and later shifted to its present campus in Chandigarh in 1956. With over a century of rich academic heritage, the university has consistently been a pioneer in higher education and research. Recognized as one of the oldest universities in India, it has played a crucial role in shaping the academic landscape of the country.

With the enactment of the Panjab University Act, the institution has been granted autonomous status, and it continues to be a leading center for higher education and research. The university offers a wide range of undergraduate, postgraduate, and doctoral programs across multiple disciplines, including sciences, humanities, social sciences, engineering, law, business administration, and medical sciences. Panjab University also boasts a distinguished faculty, state-of-the-art research facilities, and a vibrant academic environment, making it a prestigious institution of national importance.

About the Department

The Department of Geology at Panjab University, Chandigarh, is one of India's premier institutions for Earth Sciences. Established in 1958, the department is known for its excellence in teaching and research in various fields of geology, including petroleum geology, structural geology, hydrogeology, and seismology. It offers undergraduate, postgraduate, and doctoral programs, providing students with a strong foundation in both theoretical and applied geosciences. With well-equipped laboratories, extensive fieldwork opportunities, and industry collaborations, the department plays a vital role in advancing geological research and training professionals for academia, industry, and government sectors.

How to reach Panjab University

The campus is about 10 km from Chandigarh Railway Station and 8 km from ISBT Sector 17. Chandigarh International Airport is approximately 15 km away. Common modes of transport include auto-rickshaws, taxis and city bus.

<u>Experts</u>



Prof. Rodolfo Carosi specializes in structural geology and continental tectonics, focusing on orogenic belt evolution. His research includes orogen growth, collapse, transpression tectonics, metamorphism, and exhumation. He applies structural analysis, geochronology, and numerical simulation to study shear zones, faults, and crustal-scale deformation in diverse field areas. Prof. Carosi is author or co-author of more than 150 publications on peer review journals and several geological maps

at various scales in different orogens.



Dr. Mahesh Thakur focuses on landslides, active fault mapping, geothermal and mineral exploration in the northwestern Himalayas, covering Himachal Pradesh, Punjab, Haryana, and Uttarakhand. With over fourteen years of research experience. He had completed three national research projects on Neotectonics study in Haryana, Uttarakhand, Geological-Geotechnical mapping of vulnerable landslide in Uttarakhand and installation of landslide early warning system at Manikaran, Himachal Pradesh. Dr. Thakur is author or co-author of 30 publications on peer review international and national journals.

Contact Details

Principal Course Coordinator Dr. Mahesh Thakur Assistant Professor Department of Geology Panjab University, sector 14, Chandigarh, 160014, India. <u>Tel:+91-9878743251</u> Email: mahesh09@gmail.com