



AUA-IIT Bombay Overseas Study Program 2023-24

Tropical Dynamics & Global Monsoon

When: 17th June, 2024 to 21st June, 2024

Where: Indian Institute of Technology Bombay (IIT Bombay), India

Who: UG, PG, or Ph.D. students with basic knowledge and interest in Climate Science, and a bit of computer programming skill (knowing it will be good but not essential) is encouraged to apply. We will teach all the basic skill sets that are required to enjoy the course.

Why: This is a short and intensive course titled “Tropical dynamics and Global monsoon”. It is designed to give an overview of dynamics in the tropical region and of the different monsoon systems. We will start by introducing the theories of monsoon and its large-scale structure during summer and winter and its variability. We then discuss monsoon as a coupled system. We explore how the characteristics of monsoon systems and circulation features such as the Hadley cell, the Walker circulation have changed as the planet warmed. We end by teaching the processes associated with cloud microphysics and precipitation. In addition, we have set up hands-on sessions where the students will learn to use python to handle climate data and get exposed to simple climate models, Large Eddy Simulations (LES) & Direct Numerical Simulations (DNS) as well as Global Climate Models (GCMs). The students will be given individual assignments and might have to collaborate to solve group assignments. The group assignments will be a small project which the students have to present before the class. The hands-on session will train the students to perform analysis of their own research using python.

Program Schedule:

Date	Time	Topic
17 th June 2024	9:00 am to 12:00 noon	Dynamics of large-scale monsoon
	2:00 pm to 5:00 pm	Hands on session: Use of python to handle climate data
18 th June 2024	9:00 am to 12:00 noon	Monsoon variability
	2:00 pm to 5:00 pm	Hands on session: Use of python to visualise monsoon features

19 th June 2024	9:00 am to 12:00 noon	The coupled monsoon system
	2:00 pm to 5:00 pm	Hands on session: Monash climate model
20 th June 2024	9:00 am to 12:00 noon	The changing tropics and monsoon
	2:00 pm to 5:00 pm	Hands on session: Flavour of Global Climate Models and handling of CMIP6 model data
21 st June 2024	9:00 am to 12:00 noon	Cloud microphysics, precipitation and monsoon
	2:00 pm to 5:00 pm	Hands on session: Use of Direct Numerical Simulations & flavour for Large Eddy Simulations
22 nd June 2024		Mumbai City Tour (Optional)

* Students are requested to carry their laptops as it will be required during the hands-on training sessions.

What we provide:

- (1) Invitation Letters
- (2) Airport Transfers
- (3) On campus accommodation (16th June 2024 to 23rd June 2024)
- (4) Meals (Breakfast, Lunch, Dinner)
- (5) Program fee / Registration fee waived
- (6) Local Conveyance for City Tour

Invite:

We would like to invite all members of AUA to nominate up to 2 students from their university to attend this program and have 2 more students on a waiting list. If a university does not nominate any students, or only nominates 1 student, then the unfilled places can be used by students on the waiting list.

Deadline for Registration: Kindly send the nominations in the attached excel sheet by 22st April, 2024 to tanvi.mehta@iitb.ac.in. Also, attach the scan copy of the passport of the nominated/waitlist students for us to issue invitation letters.

For any queries contact: tanvi.mehta@iitb.ac.in