



INTERNATIONAL
CENTRE for
THEORETICAL
SCIENCES

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

ICTS Summer Course

DYNAMICAL SYSTEMS IN NEUROSCIENCE

In this undergraduate course, students will explore how the brain works through the lens of dynamical systems. Across neuroscience, we encounter rich dynamical phenomena spanning multiple time scales — from millisecond electrical spikes at synapses to the slow processes of learning and memory unfolding over days or months. We will use tools from nonlinear dynamics to build simple mathematical models that capture these neuroscience phenomena. No prior knowledge of neuroscience or dynamical systems is assumed. The course will introduce the fundamentals of both fields in a pedagogical and intuitive manner, emphasizing geometric reasoning, qualitative analysis, and modeling over technical formalism.



Dr. Sarthak Chandra

ICTS – TIFR, Bengaluru

May 2026 - 18, 21, 25 and 28

June 2026 - 1, 4, 8 and 11

Emmy Noether Seminar Room
(ICTS, Bengaluru)

Register Here:



Eligibility

Students are expected to have an understanding of linear algebra, single variable calculus, and at least some elementary understanding of ordinary differential equations and vector calculus.

This summer course is meant for undergraduate and masters students in science and engineering. Participants will not be provided any financial support and local hospitality for attending the course.

Application Deadline:
31 March 2026

<https://www.icts.res.in/lectures/sc-2026>