National Centre for Biological Sciences
Tata Institute of Fundamental Research

ICTS International Centre for Theoretical Sciences
TATA INSTITUTE OF FUNDAMENTAL RESEARCH

TIFR Interdisciplinary PhD Programme Physics of Life

The TIFR Interdisciplinary Programme in the Physics of Life (TIFR-PoL) targets exceptionally creative and adventurous students with strong foundations in physics, engineering, and computer science, who seek to carry out cutting-edge theoretical and experimental research in biology.

The study of living systems presents some of the most profound and challenging problems in science, including the origin of life, the evolution of complexity, and the functioning of the brain. Each question requires us to build connections between physics and chemistry at the molecular scale, with outcomes at cellular, organismal, and ecosystem scales. Over the past decade, ideas from physics, engineering, and computer science have become indispensable to biology.

The TIFR-PoL is a special stream within the TIFR graduate programme that provides unique flexibilities and resources for students with quantitative backgrounds. Foundational courses rapidly introduce biological phenomenology at all scales, from molecules to organisms and ecosystems. Advanced courses spanning soft and active matter physics, informational and data sciences, and modern experimental methods expand and strengthen quantitative skills. Students in the programme can work with participating faculty members and groups in ICTS and NCBS to define and address research questions that expand our quantitative and conceptual understanding of living systems.

HOW TO APPLY

Candidates in the TIFR-PoL Programme must attempt one of the following national tests.

- TIFR GS Examination 2027 in Physics, Mathematics, Computer Science and Learning, Information and Data Science
- JEST : Top candidates from Physics, Mathematics or Computer Science
- GATE: Top candidates from Aerospace Engineering (AE),Chemical Engineering (CH),Computer Science & Information Technology (CS), Electronics & Communication Engineering (EC),Electrical Engineering (EE),Ecology and Evolution (EY),Engineering Sciences (XE),Mathematics (MA),Mechanical Engineering (ME),Physics (PH),Statistics (ST), (with a rank valid in May 2027)
- UGC-CSIR NET Physical Sciences and Mathematical Sciences - JRF-eligible (with a rank valid in May 2027).

Candidates do not need to have any background in biological areas. A strong background in one's own subject and an interest in interdisciplinary life science research are required. Interested candidates appearing for the TIFR GS exam must indicate they wish to be considered for the TIFR-PoL Programme. Based on their GS examination scores, candidates will be invited to submit a full online application. For the JEST, UGC-CSIR NET and GATE streams, applications will nominally begin in early 2027. Details of these admission procedures, including cutoffs and application dates, will be available on the program website .

ELIGIBILITY

For the PhD Program: BE/B Tech/ME/ M Tech/ MSc/MS degrees in Engineering, Physics, Chemistry, Mathematics, or Computer Science.

ICTS and NCBS are committed to building an environment that is inclusive, non-discriminatory and welcoming of diverse individuals. We especially encourage the participation of women and other underrepresented groups.

https://pol.icts.res.in/
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