

Integrated PhD Programme in Physical Sciences (Specialization in Materials)

For the Academic year starting Aug 2022 onwards, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore will begin a new Integrated PhD Programme in Physical Sciences (Specialization in Materials). JNCASR is among the top institutions in the country for materials research and is the only institution from within the country to feature in the prestigious Nature index (2021) of the top 50 rising institutions in materials research in the world (see <https://www.natureindex.com/supplements/nature-index-2021-materials-science/tables/rising>).

This program, which will be offered jointly by the [Chemistry and Physics of Materials Unit](#) and [Theoretical Sciences Unit](#) JNCASR, aims to provide students with a strong foundation in physics and materials research. The courses offered* in each semester are listed below:

SEMESTER 1	SEMESTER 3
Classical Mechanics	Quantum Materials
Quantum Mechanics	Fundamentals of Optics
Electronics	Chemistry of Materials
Mathematical Methods	**Characterization of Materials
Lab I	Lab III
SEMESTER 2	SEMESTER 4
Electricity and Magnetism	**Computational Methods for Condensed Matter and Materials Science
Statistical Physics	Other elective courses
Solid State Physics	
Computational Methods	
Lab II	
SEMESTER 5 and 6	
Laboratory project in experimental/theoretical materials research	

* Course structure may change as per decision by competent authority

** Recommended elective course

On completing the course/lab requirements (as per prevailing institute norms), students admitted to the program will receive a MS degree at the end of three years (i.e., six semesters) from the date of joining. On completing course requirements up to the fourth semester, students will have to undertake a qualifying exam that will determine their eligibility for continuing for a PhD after their MS. Students who qualify the exam will also be eligible for a hiked fellowship as per prevailing institute norms. All aspects of the Integrated PhD program will adhere to Institute norms and may be subject to change.

Students with an aptitude for advanced physics education and materials research with a bachelor's degree in any branch of science/engineering (minimum of 55% marks) are encouraged to apply.