

HBNI-07

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Strategic Plan Of  
Homi Bhabha National Institute  
(Approved by Academic Council by circulation)



# HOMI BHABHA NATIONAL INSTITUTE

(A Deemed to be University u/s 3 of UGC Act, MHRD & an Aided Institution of the DAE, Govt. of India)

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**HBNI-07**

## **Strategic Plan of Homi Bhabha National Institute**

(2019-2024)

Homi Bhabha National Institute was accredited as a Deemed to be University in 2005 and started its operations in 2006. Over the last 14 years, HBNI has established itself as a University of high repute and excelled in its academic programs. In the last year, it crossed the milestone of awarding 1000 Ph.D degrees in a number of disciplines. The University has significantly contributed to the indigenous development of nuclear science and technology by adding to the fund of knowledge in this unique domain, generating valuable human resources and providing useful inputs to mission programs. The academic programs in the area of medical and health sciences have led to a significant addition to the Nation's strengths in medical oncology. With the momentum that has been generated through the academic programs, the University has a great potential to ramp up its contributions, expand its scope and coverage of programs and provide required human resources to meet the increasing need for green and clean energy for the country by enhancing nuclear power production and also enhancing the application of radioisotopes and radiation in various domains.

Vision of the University:

- To provide an academic framework for integrating basic research with technology development.
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- To encourage inter-disciplinary research.
- To nurture an environment for attracting high quality manpower in the sciences including engineering sciences to take up a career in nuclear

science and technology and related areas.

Mission of the University:

- To encourage pursuit of excellence in sciences (including engineering sciences) and mathematics in a manner that has major significance for the progress of indigenous nuclear technological capability.

Guiding values:

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- Always adhere to highest ethical standards.
- Put good of students first.
- Value excellence in research and foster innovation and creativity.
- Recognize importance of science for the development of society.

To achieve its vision and mission, HBNI is committed to:

- Provide a stimulating, challenging and supportive environment of global standards to its students to excel in their academic program and build a strong foundation for their future career
- Create avenues for students to learn across disciplines and add a variety of skills
- Provide opportunities to faculty to further enrich their knowledge through specific programs
- Create an ecosystem based on ethics and excellence
- Encourage and catalyse the spirit of service to the nation and to the community
- Inculcate values in faculty and students that provide impetus for lifelong learning

This document describes the strategic plan of the University for the period 2019-24, to achieve its objectives by building on its existing strengths.

**Strategic Plan:**

### *1. Enriched Bouquet of Courses:*

As a member of the DAE family, tasked with development of nuclear science and engineering and their applications for the benefit of the country, HBNI will endeavor to create and organize courses and programs that will meet the growing requirements of such development. Towards this endeavor, HBNI will take the following steps to enhance the programs and reach of HBNI and evolve it into a unique educational destination for those aspiring to grow into experts in nuclear science / engineering and related fields including mathematics and medical & health sciences.

- a. To introduce additional skill based courses (eg. Advanced analytical techniques, advanced programming languages, hospital radiopharmacy ) and to further increase intake of students in the existing skill based courses (eg.DipRP, DMRIT)
- b. To introduce value addition courses for Ph.D students (eg. foreign language, technical communication skills, computational skills) that will enhance their employability potential
- c. To introduce courses that would provide an exposure, to every student that graduates from HBNI, a broad overview of nuclear science and technology that will include the basic concepts of Radiation safety, Radiations and their applications, nuclear power and related issues in a way that the students can serve to educate common public about various concerns
- d. To introduce courses on management (financial management, construction management, human resource management) and safety (industrial safety, radiation safety) to benefit young scientists to evolve into professional managers and leaders
- e. To enter into international collaboration on nuclear education with leading countries to expand learning opportunities for students and faculty

### *2. Augmented Learning:*

HBNI will sustain and encourage continuous learning as a means to keep the faculty poised to handle challenging research problems, and equipped with current and in-depth knowledge that will facilitate their teaching and guiding research. Towards this, HBNI will introduce advanced courses on specific subjects for the faculty from time to time. HBNI will also periodically assess the academic performance of the faculty and provide them a feedback towards enabling them to improve wherever necessary.

### *3. Developing Course Material:*

Already, some CIs of HBNI are developing course material and making it available on the web (eg.through youtube). HBNI will strive to further strengthen these efforts and develop its web site Pathshalainto a unique source of course material for not only faculty and students of HBNI but also faculty and students of other Universities who have an aptitude to learn advanced topics in science and engineering. Towards this, HBNI will establish a high quality recording studio to produce video courses on advanced subjects including nuclear science and technology and upload the same on SWAYAM and other suitable platforms; it will bring out text books on specific topics in nuclear science and engineering that will benefit students in HBNI and other universities that run nuclear related courses (eg. nuclear reactor physics, nuclear safety, nuclear thermal hydraulics, nuclear analytical chemistry); HBNI will also strive to bring out glossaries of nuclear terms in various Indian languages, to enable communication on nuclear science related topics in different languages.

### *4. Other digital initiatives:*

The IMS website of HBNI has a large, valuable database, covering all students who have been enrolled in HBNI so far (over 3500) and all faculty (over 1500). Another website of HBNI has already enabled students to pay their fees online. This website will be further improved to enable students to enroll for the academic programs, submit various documents such as progress reports, or apply for academic extension, on-line. This will not only be a student-friendly measure, enabling faster processing, it will also improve accuracy of data on our database.

Similarly, faculty will also be able to upload data on their academic achievements, honours received etc.

Interactive classroom management system will be introduced in each CI / OCC. This Online facility will include course registration, attendance, availability of syllabi and study resources, online assignment submissions etc.

#### *5. Interaction with Industry:*

Several R&D programs pursued by the CIs/OCC of HBNI have the potential to result in commercial products/processes, and HBNI will encourage its students and faculty to transfer their R & D results to industry to realize commercial products/processes. Wherever possible, the results will also be translated to suitable products for societal applications. HBNI will organize periodical interaction of students and faculty with industry to ensure that the innovation potential of the R & D results is quickly realised, and the students also get guidance and motivation to take up entrepreneurship after their successful completion of the academic program.

#### *6. Outreach:*

As a University with a large number of eminent faculty in a very specialized domain of knowledge, HBNI will strive to expose its students and also common public to the excitement and benefits of research in nuclear science and engineering, and to appreciate the contributions made by pioneers to advancement of science and technology. Towards this, CIs/OCCs of HBNI have been pursuing science outreach programs, which will be further increased. Through its website, HBNI will provide educational resources to common public on topics such as radioactivity and its applications, nuclear power, accelerators, etc., so as to provide authentic and accurate information for appreciation by common public.

#### *7. Talent search and recognition:*

HBNI recognizes that for excellence to be identified and nurtured, it is important

to have specific schemes that can benchmark the performance of the students and faculty. HBNI has introduced awards to be presented to meritorious students and will expand the scheme further to recognize special talent and innovation among students and faculty.

#### *8. Synergy among constituents:*

The CIs and OCC of HBNI have set up world class research infrastructure and demonstrated excellence in basic as well as applied research. HBNI will introduce schemes that would further synergise the academic programs across all CIs/OCC to provide benefits to students as well as faculty. HBNI will also expand its reach by integrating additional DAE institutions as CIs of HBNI with due approvals.

#### *9. Alumni:*

Alumni are the brand ambassadors for the University; also, those students of HBNI who take up career outside DAE, will be able to use the exposure they obtain to provide valuable inputs to the programs and processes in HBNI. Most of the grant-in-aid institutes of DAE, and some of the R&D units, who are CIs/OCC of HBNI already have an active alumni program. HBNI will take necessary measures to integrate the alumni database, introduce alumni programs in all CIs/OCC where an active program is yet to be evolved, and also evolve schemes to reinforce interactions between alumni and current students such as annual or biennial meeting of alumni, and inviting alumni to participate in Foundation Day celebrations.