

# **Physics Student's Guide to the Doctoral Programs at HBNI-IMSc**

**HBNI-IMSc Office**

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# 1 Welcome

Dear Student,

Congratulations on being selected for a Doctoral program of HBNI at IMSc and Welcome to IMSc!

This booklet contains step-by-step information about getting your Ph. D. Please read carefully and familiarise yourself with the requirements and procedures.

The qualification for the Ph. D. degree has several components - qualifying grade in course work, successfully clearing the *Oral Comprehensive Examination*, getting a supervisor and working on a thesis topic leading to at least one original publication and finally writing a thesis to be examined by experts in the field. Each of these is detailed below.

Shortly after your joining, you will be registered with HBNI. Your normal tenure is *five years* with a conditional extension possible for a maximum of another two years. You will be assigned a *Monitoring Committee* to advise and assist you during your course work till you find a Ph. D. supervisor. Thereafter a *Doctoral Committee* will monitor your progress of your research. Till the time your Doctoral Committee is formed, you will receive the *Junior Research Fellowship* (JRF) and upon the recommendation of the Doctoral Committee, you will receive the enhanced, *Senior Research Fellowship* (SRF).

You are expected to meet the *Convener* of your monitoring committee once a month and the full committee at the end of each semester. *This is your opportunity to seek any clarifications, give your feedback on the course work and communicate any academic difficulties you face.* Your monitoring committee will be glad to assist you.

## 2 The Course Work

### 2.1 Syllabi

The detailed course structure as well as syllabi are available on the web-site. The Ph. D program has *one year* of Course Work while the Integrated Ph. D. program has *two years* of Course Work enabling getting a Master's Degree at the end of the two year course work.

In the final semester of the course work, there is a project to be completed. You have to write a project report, which constitutes the Master's thesis for the Integrated Ph. D. students. This will be examined by a faculty member other than your project supervisor. Your Monitoring Committee may require you to present your work as a seminar and give appropriate grade as for the other courses. *This is your opportunity to seek a potential guide and get familiar with research methodologies.*

**The project should be submitted to the Monitoring Committee Chair, no later than May 31st so that the project evaluation can be completed before June 15.**

*In case you feel that you have already studied a particular course and are proficient in it, you could seek exemption from the Course after satisfying the teacher who may give you an exam at the beginning of the course.*

## 2.2 Evaluation

The course teachers will formulate and convey to you the evaluation method for their respective courses. Typically, it will involve home assignments, a mid-term examination and a final examination with some suitable weightage for each component.

## 2.3 Qualifying grades

You are expected to be regular in attending the lectures, doing the home works and maintain an average *qualifying grade* throughout the Course Work.

The grades  $\leftrightarrow$  marks correspondence is as follow: 'A'  $\leftrightarrow$  (90 - 100 %), 'B'  $\leftrightarrow$  (80 - 89 %), 'C'  $\leftrightarrow$  (70 - 79 %), 'D'  $\leftrightarrow$  (60 - 69 %), 'F'  $\leftrightarrow$  (< 60 %). The *Grade Point Average* is computed by assigning 4 points to an 'A', 3 points to a 'B', 2 to a 'C' and 1 to a 'D' and taking the average.

The *Qualifying GPA* are:

- A single 'F' will result in termination of the registration and the student will have to leave the Institute.
- Qualifying GPA for proceeding to Ph. D. is  $\geq 2.0$ ;
- For Integrated Ph D students, a GPA  $\geq 1.0$  qualifies for the Master's Degree.

## 3 The Oral Comprehensive Examination

This is the second important component for qualifying for Ph. D. research work. At the end of your course work, the Dean/Academic Program Coordinator in consultation with the teachers, will prescribe a syllabus for the oral comprehensive exam. The purpose of this examination is to determine if you have adequate preparation to undertake doctoral research. This is over and above the qualifying grades in your Course Work. A satisfactory performance will permit you to seek an advisor and proceed to your doctoral research.

In case of unsatisfactory performance, you will be given another opportunity with a larger committee including the Dean, examining you.

Failure to clear the Oral Comprehensive Examination will foreclose your option of going for the Doctoral research and your registration will be terminated.

**Note: The Oral Comprehensive Examination must be completed before July 5th.**

## 4 Doctoral Research

After successful completion of the course work and the Oral Comprehensive Exam, **you should arrange with a faculty member to be your Doctoral advisor within *three months* and inform the monitoring committee.**

If needed, a further extension of three months to confirm with an advisor will be granted by the Dean on the recommendation of the Monitoring Committee. A maximum of two such extensions can be given.

As per the HBNI rules, a supervisor can be from any of the CI's or from another Institute with which IMSc has a appropriate MoU. In such a case, there should be an IMSc faculty member as a *co-guide*.

After arranging with an advisor, the Advisor/Dean will constitute a Doctoral Committee. This will meet once in six months to monitor your progress and advise you accordingly.

Your thesis supervisor and you, will formulate a suitable thesis topic. You will receive guidance from your supervisor and the Doctoral Committee. However, please be aware, succeeding in the research work is primarily your responsibility. The Doctorate degree declares that you have the necessary competence to undertake and carry through independent research.

The normal tenure of registration is **five years**. An extension to the sixth year is possible upon the recommendation of the Doctoral Committee and subject to the approval by the Director. A further extension for another year could only be obtained by the approval of the Board of Studies and the Director. These extensions are permissible only under exceptional conditions and on well justified grounds.

Your advisor and the Doctoral Committee will determine if you have done adequate work for writing your thesis and advise you accordingly. It is a requirement of the UGC, that there should be at least *one publication* before a thesis may be submitted.

A separate booklet is available on the web-site for basics of research methodologies as well as for the ethical aspects of doing and publishing research work.

*Note: You are expected to be a Teaching Assistant for one of the courses, for one semester during your tenure. There is a financial compensation for these duties.*

#### 4.1 The Thesis Submission Process

Here are the steps in the thesis submission process:

1. Submit a synopsis to your advisor (a template is available on the web-site);
2. Advisor submits your synopsis and a list of 6 examiners to the HBNI Cell;
3. The Dean sends the papers to the Board of Studies for approval and a selection of 4 examiners. This conveyed back to the IMSc Dean;
4. The thesis is prepared (template available on the web-site) and submitted to the HBNI Cell *within three months* of synopsis submission;
5. The Dean, IMSc coordinates the evaluation process. Upon receiving two examiner's reports, a viva examination is organised;
6. After the viva examination, the final copy of the thesis is prepared incorporating all suggestions of the examiners. **Three** bound copies and a soft copy is to be submitted to the HBNI Cell. **A one page summary of your thesis** (for HBNI annual report, as a .doc file) and *your name in Devanagari Script* (for inclusion in the Degree certificate) is also required to be submitted to HBNI;

7. The Dean-Academic, IMSc issues a certificate of completion of the viva to the student. HBNI cell sends the necessary papers to HBNI, central office who after a scrutiny sends a provisional certificate to the HBNI Cell. The final Degree Certificate is sent directly to the student and the communication address given by the student.

With the Doctorate Degree, you begin your research career.

**Wish you all the best for a successful tenure at IMSc.**