RULES AND REGULATIONS

Doctor of Philosophy (Ph.D.) Programme

Academic Affairs

(2014-2015)

NATIONAL INSTITUTE OF TECHNOLOGY GOA

Ph.D. ORDINANCES AND REGULATIONS

(Effective from 2014-15 admissions)

ORDINANCES

1. A candidate who has qualified the Degree of Master of Technology or Master of Science [M.Tech/M.S/M.Sc.] or Master of Arts from a recognized Institute or University in the discipline as prescribed in the rules and regulations is eligible to apply for Ph.D. programme of National Institute of Technology Goa. Exceptional candidates (with CGPA>=9.0) with B.Tech/B.E from a reputed Institute are also eligible to apply for the Ph.D. programme. *(Amended in 6th Senate Meeting)*

2. The award of the Ph.D. Degree shall be in accordance with the regulations set by the Senate of the Institute.

3. The award of the Ph.D. Degree shall be made by the Institute on the recommendation of the Senate and with the approval of the Board of Governors (BOG) of the Institute.

4. The Senate/BOG of the Institute has the power to modify any regulations stated from time to time.

RULES AND REGULATIONS

P1. Ph.D. schemes and categories

P1.1 NIT Goa offers PhD programmes in the Full-time/regular scheme, Part-time scheme (*Amended in 9*th *Senate Meeting*), Self-Financed and Sponsored.

The award of the Ph.D. degree is in recognition of high achievements, independent research and application of knowledge to the solution of engineering and scientific problems. The details of research programmes and faculty research interests may be found on the department websites. NIT Goa currently offers Ph.D. degree in:

   a) Computer Science and Engineering (CSE)
   b) Electronics and Communication Engineering (ECE)
   c) Electrical and Electronics Engineering (EEE)
   d) Mechanical Engineering (MCE)
   e) Civil Engineering (CVE)
   f) Applied Sciences (APS)
   g) Humanities and Social Sciences (HSS)

P1.2 The Assistantship/Fellowship will be payable for a duration fixed by the Ministry of Education (MoE) (or the granting agency) or until the date of submission of thesis, whichever is earlier. The Institute admits Ph.D. candidates under the following categories:

   a) Full time research scholar on Institute fellowship (FT)
   b) Teaching Assistant (TA)
   c) Teaching Assistant through Project (TAP)
   d) Industry Fellowships (IF)
   e) Govt./Semi Govt. Fellowship Awardees (FA) (CSIR, UGC, DOE, DST, DBT, NBHM, ISEAP etc.)
   f) Sponsored candidates (SP)
   g) Self-Financed (Indian/Foreign) / Study Leave (SF)
   h) Indian Council for Cultural Relations Award (ICCR) (Foreign Nationals)

The candidate should have qualified GATE/NET examination for scholarship. (*Amended in 6*th *Senate Meeting)*

P2. Admission schedule

P2.1 Normally, advertisement for Ph.D. programmes is issued in the month of March (for July session) and October (for December/January session) each year in the Institute website as well as in leading newspapers *(Amended in 6*th *Senate Meeting)*. Admissions are carried out in the months of July and December/January. Candidates seeking admission under this clause must fulfill the required academic qualification/experience at the time of interview. They must join within two weeks after the issue of admission offer unless specifically permitted to do so. Admission is subject to vacancy being available in the relevant specialization.

P3. Eligibility criterion for admission to Ph.D. Programmes

P3.1 Table1 defines the minimum qualification(s) required for admission and provisional registration to Ph.D. programmes at NIT Goa for General/OBC (Non-creamy Layer)/SC/ST/PH category students.

Table 1: Minimum eligibility Criterion for Admission to Ph.D. Programmes

	General/OBC (Non-Creamy Layer)	SC/ST/PH	Qualification through National level examination requirements
Ph.D. in Engineering and Technology (CSE, ECE, EEE, MCE, CVE)	Master's Degree in Engineering or Technology (M.E. or M.Tech.) in the relevant discipline with a minimum 6.5 CGPA on a 10 point scale grading system or 60% marks in both Bachelor's and Master's levels from recognized Technical Institute or University.	A minimum 6.0 CGPA on a 10 point scale grading system or 55% marks.	A GATE Score and/or qualifying score in the relevant discipline
For Ph.D. in Applied Sciences (APS) and **Humanities and Social Science Sciences (HSS)**	**For Applied Science Streams:** Master's degree in Sciences / M. Tech. in the relevant area with a minimum 6.5 CGPA on a 10 point scale grading system or 60% marks in both Bachelor's and Master's levels from recognized Institute or University. **For Humanities Streams:** Master's degree in Humanities with a minimum 6.0 CGPA on a 10 point scale grading system or 55% marks in both Bachelor's and Master's levels from recognized Institute or	**For Science Streams:** A minimum 6.0 CGPA on a 10 point scale grading system or 55% marks. **For Humanities Streams:** A minimum 5.5 CGPA on a 10 point scale grading system or 50% marks.	CSIR/UGC/NET/ICAR /ICMR/DST INSPIRE fellowship

	University for General and OBC candidates. For SC/ST candidates a minimum 5.5 CGPA on a 10 point scale grading system or 50% marks, is required. *(Amended in 16th Senate Meeting)*.		

NOTE: The cut-off and shortlisting criteria are decided time to time by the Department Selection Committee (DSC).

P4. Selection to the Ph.D. Programmes

P4.1 Provisional selection of the candidates will be conducted by a Department Selection Committee (DSC), which is constituted by the Director. DSC will consist of Head of Department (HoD)/a Professor within the Institute as Chairperson (to be decided and nominated by the Director), Department Ph.D. coordinator (Internal Expert), all probable supervisors from the Department, and Dean (Academics).

P4.2 The mode of selection for admission and provisional registration to the Ph.D. program is decided by the DSC. Normally, the selection is made on the basis of written test and/or interview.

P4.3 Eligible and shortlisted candidates will be called by the department for written test and interview (only for those who clear written test).

P4.4 Allotment of research scholars to supervisor(s) will be made by the Chairperson, DSC, taking into consideration the preferences of the research scholars and supervisors. Consent of the Supervisor(s) and student is essential for the allotment. Normally, there shall not be more than two supervisors (one is the supervisor and other is the co-supervisor) for a research scholar. In the case of change of supervisor, the research scholar may submit a written request to the Department Research Committee (DRC) citing valid reasons. The DRC may recommend the Doctoral Research Programme Committee (DRPC) for change of supervisor if satisfied with the request. The change shall be subject to the approval from the DRPC and Dean (Academics).

P5. Duration of the programmes

P5.1 Minimum duration for doctoral research for a Ph.D student with M.Tech. or an equivalent qualification is 3 years *(Amended in 6th Senate Meeting)*. All candidates are allowed a maximum of 7 years for submission of their thesis. After completing 5 years of registration (counting from the time of admission to department), a candidate registered for Ph.D. will be examined by the DRC for re-registration in order to seek extension of his/her programme and should be approved by the DRC recommended by the DSC. Based on the recommendations of his/her DRC the candidate may be allowed to register for not more than 2 years**.**

P6. Academic requirements

P6.1 In order to overcome any deficiency in the breadth of fundamental training or proper foundation for advanced work; special makeup or pre-doctoral courses are to be pursued by admitted candidates in each department. The candidate should approach the supervisor for the courses that he/she needs to pursue. These courses should be approved by the DRC. The course work may be completed on the basis of lectures/self-study, as suggested by the supervisor and approved by the DRC.

P7. Constitution of DRC and progress during Ph.D. for all categories of admission

P7.1 Candidate will enroll for coursework, as self-study/lectures and complete 12 credits achieving a letter grade of at least 7.0 grade points in each course. Further, a Mandatory Learning Course (MLC) on "Research Methodology" with 'SA' (Satisfactory) Grade has to be obtained *(Amended in 10th Senate Meeting)*. The choice of coursework is based on decision of the candidate's supervisor and DRC and this is recommended to help the candidate with preparatory work for research.

P7.2 Candidate's DRC will comprise of a Chairperson (Head of Dept. (HoD) or his/her nominee, usually of the rank of Professor) preferably from the same department, Internal Expert - Area expert from the Department, External Expert - Area expert from another department, and the Supervisor(s). The same should be informed to Dean (Academics) through DRPC.

Reconstitution of DRC member(s) with internal/external expert is subjected to approval from DRPC and Dean (Academics). In such a case the outgoing internal/external expert is not responsible for the candidates' further progress. *(Amended in 6th Senate Meeting)*

P7.3 Candidate will have to appear for a *Comprehensive Examination*, within **2 years** of registration of Full-time Ph.D. program and within **3 years** of registration of Part-time Ph.D. program, based on the courses approved by DRC. He/she will have to demonstrate satisfactory progress/performance in written examination or course viva-voce and must fulfill the departmental norms in force for evaluation of course works from time to time. *(Amended in 19th Senate Meeting)*

P7.4 Candidate will present a research seminar as a part of the comprehensive examination to the DRC. In this presentation, he/she should identify his/her problem statement, thesis title and methodologies in the chosen problem area(s). He/she should have preferably published at least one paper in a reputed conference. The DRC may then approve and recommend him/her for "*Confirmation of Registration*" of Ph.D. along with confirming the area/title of his/her proposed work by a written communication to Dean (Academics) through DRPC. A maximum of two chances will be given for completion of comprehensive examination within the stipulated time. In case, the student is not able to clear Comprehensive Examination in the first attempt, one last change will be given for completion, within the stipulated time. *(Amended in 6th Senate Meeting)*

P7.5 Candidate will give research progress seminar every semester before the DRC. His/her progress will be monitored with recommendations that must be effectively incorporated by him/her. Candidate will be evaluated for his/her research progress through the seminar conducted in each semester, which will further be graded as - "SA" for satisfactory and "US" for unsatisfactory. The DRC sends this report/comments to the Dean (Academics) through DRPC at the end of every semester. The DRC has to maintain adequate record of the candidate's progress and communicate the same to Dean (Academics) through DRPC at the end of every year.

P7.6 If a candidate gets "US" for the first time, the DRC warns the candidate and allows him/her to proceed with the research work. In case the candidate gets "US" grade second time, his/her case may be recommended by the DRC for termination of Ph.D. registration. The recommendation should be forwarded in the form of report to the Dean (Academics) through DRPC.

P8. Minimum requirement of publication for the award of Ph.D. degree

P8.1 A minimum of 3 reputed journal papers are to be published as a part of Ph.D. out of which, two journal papers should be published in SCI/SSCI indexed journals. The specializations where SCI/SSCI journals are not available the equivalent journals in the field should be considered with the approval of Chairman, Senate (*Amended in 9th Senate Meeting*).

P9. Pre-synopsis Seminar and Synopsis Submission

P9.1 Based on the candidate's performance in comprehensive exam and his/her research contributions; the DRC and DRPC in consultation with Dean (Academics) can recommend a candidate to submit his/her synopsis within three years from the date of registration of Ph.D.

P9.2 Candidate may be allowed to present a pre-synopsis seminar and submit synopsis based on the recommendations of the DRC. At least two journal paper should be accepted/published in peer reviewed journal (preferably, SCI journal) prior to pre-synopsis seminar. A candidate may be allowed to repeat a pre-synopsis seminar based on the recommendations of the DRC. In case of approval of the research work presented in the synopsis, he/she must submit the thesis within *three months* of successfully presenting the pre-synopsis seminar. *(Amended in 6th Senate Meeting)*

P9.3 Details of the Pre-Synopsis Seminar shall be notified well in advance, so as to enable interested faculty members and students to attend the same.

P9.4 The Chairperson of the DRPC shall forward the DRC's assessment report on the Pre-Synopsis Seminar to the Dean (Academics).

P9.5 ONE printed copy and ONE soft copy (PDF format) of the synopsis shall be submitted to the Dean (Academics) through Chairperson of the DRPC, in the prescribed format consisting of maximum of 15 pages including bibliography of research work and details of publications corresponding to research work.

The synopsis submission form must accompany the following:

a) Declaration from the Research Scholar in a prescribed proforma, stating Bonafide nature of the work that the thesis does not contain any work which has been previously submitted for the award of any degree, the extent of collaboration, if any.

b) List of papers presented/published/accepted for publication or presentation, in the prescribed format and reprints of those papers.

c) Details of the courses studied (Grade card to be enclosed)

P9.6   DRC in consultation with DRPC will identify five examiners from within India and five examiners from outside India. It is strongly recommended that the Examiners/Reviewers be chosen from reputed national and international institutions. The DRPC should communicate the list of examiners to Dean (Academics) in sealer cover in a specified format.

P9.7   After officially communicating the synopsis copy to an examiner, if no response is received at the Dean (Academics) office within 6 weeks, the Chairman Senate reserves the option/right to choose an alternative examiner from the panel suggested by the DRPC.

P10. Ph.D. Thesis Submission and Assessment

P10.1   THREE printed copies (soft-bound) and ONE soft copy (PDF format) of the thesis shall be submitted to the Dean (Academics), through Chairperson of the DRPC, in the prescribed format, not later than three months from the date of submission of the Synopsis

 a) If the thesis is submitted after 3 months of submission of Synopsis, approval of the   Chairman Senate is necessary for submission up to 6 months.

 b) If the thesis is not submitted within six months after submitting the synopsis, the registration is liable be terminated.

P10.2 Along with the Thesis, the Research Scholar shall submit the Details on the Research Publications in the prescribed format with Reprints/Acceptance letter from the Journal editor and a certificate from Accounts Section that there are no dues against the Scholar and the details on research publications

P10.3 The Ph.D. Thesis submitted by the scholar will be evaluated by DTAC constituted by Director by selecting two external referees (one will be invited for defense also) from the Panel submitted by DRPC.

P10.4 The referees shall independently report to the Dean (Academics), preferably within six weeks from the date of their receipt of the Thesis. The referees will be requested to indicate their decision in a specific evaluation format supplied by the Institute and that their reports should include;

a) a critical survey and evaluation of the quality and quantity of the work as embodied in the thesis.

b) questions, if any, to be asked or points to be clarified at the viva-voce examination, and

c) a definite recommendation as to whether the Thesis is acceptable for the award of the degree of 'Doctor of Philosophy'.

P10.5   If a referee in his/her report is not in a position to make a definite recommendation for the award of the degree, he/she should be requested to assist in deciding whether the candidate is required to make:

a) Substantial revisions involving rewriting of one or more chapters without, however, doing any further Research work

b) completely rewrite the thesis if the thesis, though not acceptable, in the present form, reveals sufficient quality and quantity of work to warrant the candidate being given an opportunity for further Research work and/ or reinterpretation of results.

P10.6   The copies of the referees' reports when received shall be confidentially made available to the Research Guide(s) through Chairperson, DRPC. The Research Guide(s) shall send comments on these reports through DRPC for consideration by the Dean (Academics).

P10.7   On the basis of the referees' reports and the Research Guide(s)' comments thereon, the Dean (Academics) will decide whether the Thesis be accepted for the viva-voce examination, or be referred again to a new referee subject to the following:

a)   If both the reports are positive, then the viva-voce examination can be conducted

b)   If one is positive and another suggests minor revision, the candidate may be asked to revise and send to the same reviewer provided the reviewer has asked to send it to him/her. If the reviewer has asked to revise and present in the viva-voce then the revisions should be incorporated and presented during the viva-voce.

c)   If one of them accepts and the other rejects; the Thesis as it is, shall be referred to a third referee chosen from the Panel of Referees by the Director.

d)   If one of the reviewers gives acceptance and other reviewer suggest major revisions with the suggestion to send back to him/her, the candidate should incorporate the comments and the revised thesis should be communicated. In case, the revised thesis also receives negative comments then the thesis can be sent to the third reviewer

e)   A Thesis rejected by two referees may be re-submitted after revision, incorporating the required modifications and/or alterations and/or additions etc., in the light of the referees' comments. Such resubmission shall be made not earlier than three months and not later than one year from the date of such intimation to the Research Scholar by the Dean (Academics). The Thesis so resubmitted may be examined either by the same referees or by new referees.

f) If the referees recommend acceptance of the thesis subject to minor modifications only, the thesis can be resubmitted after incorporating the modifications in the light of the referees' comments, within a period of six months. The Thesis so resubmitted be preferably examined by the same referees.

Rejection of the thesis so resubmitted will disqualify the candidate from further consideration for the award of the Ph.D. degree, in the topic of research chosen by him/her.

P10.8 A candidate, whose thesis has been recommended for the award of the Ph.D. degree, shall be required to defend his/her Thesis at an open viva-voce examination conducted by the DTAC. After satisfactory defense of the work, the DTAC will recommend the approval of thesis to the Director for further action towards the award of the Ph.D. degree

P10.9 The DTAC shall submit its report in the prescribed form to the Director within ONE month after the completion of viva-voce exam. It is the responsibility of the Research Guide to see that all the necessary corrections are incorporated in the final version of the thesis before sending the DTAC report to the Director.

P10.10 After satisfactory completion of the viva-voce examination, the degree may be conferred after approval by the Senate.

P10.11 If a Thesis has been accepted but the candidate fails at the viva-voce examination, he may be permitted by the Director to re-appear for viva-voce examination again at a later date. The Recommendations of the DTAC conducting the viva-voce examination shall be considered by DRPC in taking a decision in this respect.

P10.12 After successful completion of the viva-voce examination, the candidate shall submit 2 hard copies of final version of the thesis and soft copy in CD to the office of the Dean (Academics) through DRPC.

P10.13 The abstracts of evaluation reports of PhD theses will be placed before the Senate as reporting item. The full original reports of all examiners will be placed before the Senate only in those cases of rejection by one of the examiners.

P11. Conversion of Full-time Ph.D. Scheme to Part-time Ph.D. Scheme *(Amended in 19th Senate Meeting)*

The student may be allowed to convert his/her Ph.D. registration from a full-time to a part-time scheme **after the completion of comprehensive examination with substantial research output.** He/She has to apply to the Director through the proper channel (Supervisor(s), DRPC, and Dean Academics). The institute fellowship must be stopped immediately upon submitting the application in such a case. However, the conversion from Part-Time to Full-Time will not be permitted.

P12. Conversion of Project Fellowship to Institute Fellowship *(Amended in 19th Senate Meeting)*

The following procedure is recommended for converting JRF/SRF under different schemes to Institute fellowship:

1. The scholar must have been selected through a regular advertisement at the time of Ph.D. admissions satisfying the eligibility criteria. Initially, he/she will be paid a scholarship from the project funds of the Project Investigator (PI). His/Her admission at this point of time will be an addition to the number of seats allotted to the Department/Institute.

2. The scholar is eligible for conversion from JRF to Institute fellowship only after working for a period of 1 year in case of 2-year project or 2 years in case of a 3-year project.

3. If the project is getting completed in the beginning or in between the next semester, the following guidelines are applicable:

(i) Scholar needs to apply for PhD admission against the advertisement during the period in which the scholar wants to get his/her project fellowship converted to Institute fellowship.

(ii) No need to attend written test or interview, if his/her first selection as JRF/SRF was against an advertisement for Ph.D. admissions. Otherwise, he/she has to attend the selection process.

(iii) The PI shall submit the recommendations of the DRC for considering his application for converting from project to Institute fellowship. This is required as such conversions will be shown against the number of admissions allotted to the department for that Academic year.

(iv) The Department should include all such candidates in the shortlist for the selection process irrespective of the merit among that batch of applicants.

(v) The HoD shall take care of including all such names in the final selection list.

(vi) Departments are requested to note that all such selections will be deducted from the number of admissions allotted to the department for that academic year.

4. The scholar shall apply to the Director through proper channel (i.e., Supervisor(s), DRPC and Dean-Academic) requesting for conversion of the scholar from Project funds to the Institute fellowship once the project gets closed. The supervisor (PI) should enclose the following with the application:

(i) UC and SE obtained from Institute accounts section at the time of closing the project

(ii)   Proof of the selection at the time of selection of JRF/SRF against a regular advertisement for Ph.D.

(iii)   The scholar's application against the Ph.D. admissions and the list of selections for the current semester in which the conversion is requested.

P13. Reservation of Seats

As per Government norms.

P14. Fees and Payments (Semester wise)

As per Institute policy updated from time to time.

P15. Financial Assistance and other support

As per Government of India norms.

P16. Leave Rules

As per Institute policy updated from time to time.

P17. Withdrawal of Admission

As per Institute policy updated from time to time.

P18. Power to Modify

Notwithstanding all that has been stated above, the Chairperson, Senate has the right to modify any of the above regulations from time to time and it will be ratified in the sub-sequent senate meeting.

P19. Committees / Functionaries

The following committees shall be constituted for the Doctoral Research Degree Programme

P19.1 Doctoral Research Programme Committee (DRPC):

Constitution:
  (a)   H.O.D. / Programme Co-ordinator or a Professor nominated by the Director - Chairperson

  (b)   All approved Ph.D. Guides associated with the Research Programme - Members

Note:

- There shall be one DRPC for every department that is involved in the Ph.D. degree programme, or for every inter (multi) disciplinary doctoral research programme.

- The Secretary (DRPC) shall be nominated by the Chairperson on rotation basis for a period of one year.

- The Chairperson may co-opt/invite more members including a maximum of three outside experts.

- The quorum for each meeting shall be THREE.

Functions (Highlights):

(i) To monitor the conduct of all courses of the department for the PhD programme.
(ii) To ensure academic standard and excellence of the courses offered by the department.
(iii) To obtain the evaluation of each student in a course separately for Course Instructor's assessment, mid-semester tests and end-semester tests.
(iv) To consolidate the grades of the students registered for various courses offered by the Department and submitted by the different Course instructors. The CGPA for each scholar should be computed up to the end of PhD Course Work and sent to the Academic Section of the Dean (Academic).
(v) To take appropriate actions based on communication of DRC and DTAC.
(vi) To recommend the Panel of Referees in consultation with the Guide for formation of DTAC (TEN Referees, with FIVE drawn from India and FIVE from abroad) to the Director for approval, immediately after the acceptance of the DRC's report on the Pre-Synopsis Seminar and along with the submission of the Synopsis to the Director
(vii) In case of Institute scholarship holders, the continuance of scholarship beyond two years will be subject to satisfactory progress made by them as assessed by the pertinent DRC and approved by DRPC communicated to the Academic Section of Dean(Academics)
(viii) To consider any matter related to the Research programme of the department.
(ix) To maintain a separate register to record the minutes of all the meetings.
(x) To conduct at least two meetings each semester and send the proceedings of the meeting to Dean(Academics).

P19.2 Doctoral Research Committee (DRC):

Constitution:
(a) Head of the Department or his nominee ----Chairperson
(b) Supervisor(s) -------- Members
(c) Internal expert –area expert from the Department --Member
(d) External expert---area expert from another department--Member

Note:
- There shall be one DRC for each Ph.D. scholar.
- The DRC shall be constituted by the department and the same need to be communicated to Dean(Academic) through DRPC.
- Under special circumstances, members from outside the Institute may be co-opted with the prior approval of Dean (Academics).

Functions (Highlights)
 (i) To assess and approve the Research Proposal and Synopsis.
(ii) To communicate the yearly assessment reports about the progress of the research work to DRPC.
(iii)To assess the Pre-Synopsis Seminar and communicate the results to the Director through the DRPC.

P19.3 Doctoral Thesis Assessment Committee (DTAC):

Constitution:
(a) Chairperson DRPC or a Professor nominated by the Director on recommendation of DRPC ----Chairperson
(b) Supervisor(s)--------- Member(s)
(c) At least One Faculty from within the parent department of Ph.D scholar, selected by Dean (Academics) from the recommended panel----------Member
(d) At least One Faculty from outside the parent department of the guides(s), selected by Dean(A) from the recommended panel--------- members
(e) Two External Referees ----------- Members
(f) DRC Members ---------- Members

Note:
- There shall be one DTAC for each Ph.D. scholar.
- The DTAC shall be constituted by the Director when the scholar submits the PhD Thesis for assessment.
- The two external referees shall be selected by the Director, from a panel of TEN referees (Five from India and Five from abroad). These TWO External Referees will be requested for an assessment of the PhD Thesis, and one of these Referees will be invited for the final *Thesis Defense and Viva-Voce Examination*.

Functions (Highlights):
 (i) The two external referees will evaluate the Doctoral Thesis and send the report to Director.
(ii) DTAC will evaluate the research work and the Doctoral Thesis, based on the defense of the Thesis through an open seminar and viva-voce examination and send the report to Director through DRPC