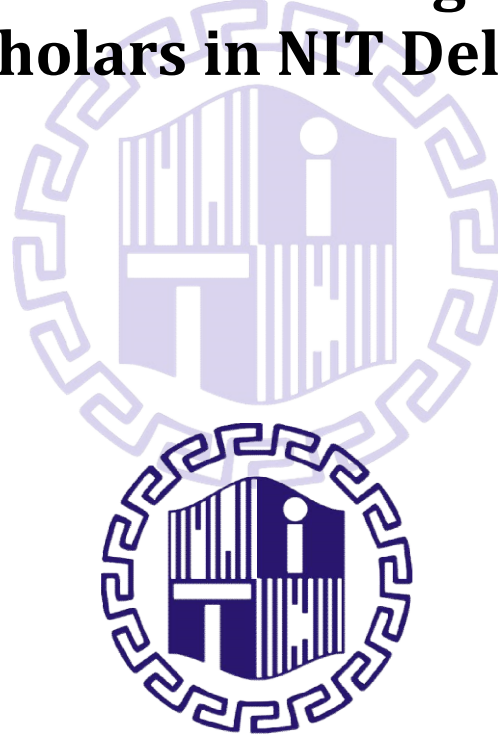


डॉक्टर ऑफ फिलॉसफी (पीएचडी)
प्रोग्राम
का अध्यादेश

**Ordinance of
Doctor of Philosophy (PhD)
Programme**

**(Applicable for all the registered PhD
scholars in NIT Delhi)**



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

NATIONAL INSTITUTE OF TECHNOLOGY DELHI

(शिक्षा मंत्रालय, भारत सरकार के अधीन एक स्वायत्त संस्थान)

(An autonomous Institute under the aegis of Ministry of Education, Govt. of India)

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TABLE OF CONTENT

Sl. No.	Content	Page Number
1.	Overview of Institute's PhD Programme	3
2.	Areas of Research	3
3.	Minimum/Additional Educational Qualifications for Admission	5
4.	Student Categories	9
5.	Admission Process	11
6.	Admission	13
7.	Registration	13
8.	Research Guidance	14
9.	Limit on number of Research Scholars	15
10.	Residential Period of PhD Programme	16
11.	Course Work	17
12.	Leave Rules	19
13.	Institute Post-Graduate Committee (IPGC)	20
14.	Department Post-Graduate Committee (DPGC)	20
15.	Research Advisory Committee (RAC)	21
16.	Comprehensive Procedure	21
17.	Confirmation of Candidacy/Topic Registration	22
18.	Progress Evaluation	23
19.	Pre-PhD Presentation and Synopsis Submission	23
20.	Submission of Thesis	24
21.	Evaluation of Thesis	25
22.	Award of Degree	27
23.	Stipend-cum-Teaching Assistantship/Scholarship and Contingency Grant	27
24.	Remuneration of Examiner (s)/Supervisor (s)	27
25.	Withdrawal from PhD Programme/ Semester/ Courses	28
26.	Discipline	28
27.	Regarding Travel/ Registration support	28
28.	Right to Amend the Regulation	29

1. Overview of Institute's PhD Programme

The institute, apart from establishing a robust teaching environment, is keen to facilitate and support cutting-edge research in a variety of areas. This aspect will enable the students to acquaint themselves with the latest developments in their respective areas of study and to pursue their own research interests. This will also result in a constant revision of the contents of the courses that are being taught. The institute has already started its PhD programme in 2012, so that the research environment is further augmented, expanded, and made even more vibrant.

The Institute offers PhD programmes in a wide range of areas in Sciences, Engineering, Humanities & Social Sciences. The broad objective of the PhD programme is not only to keep pace with the expanding frontiers of knowledge but also to provide research training relevant to the present social and economic objectives of the nation. The academic programme leading to the PhD degree is broad-based and involves a minimum course credit requirement, comprehensive procedure, synopsis/Pre-PhD presentation/seminar, thesis submission followed by Open house viva-voce/presentation. The Institute also encourages research in interdisciplinary areas through a system of joint supervision and interdepartmental group activities. The presence of highly motivated research-oriented faculty members provides excellent opportunities for such programmes. The Institute undertakes sponsored research and development projects from industrial and other organizations in the public as well as private sector.

2. Areas of Research

Table I presents the available areas of research leading to a PhD degree in the following departments:

Table I

	Department	Board Areas of Research
1.	Civil Engineering (CE)	Environmental Engineering, Transportation Engineering, Hydraulics and Water Resource Engineering, Structural Engineering, Geotechnical Engineering, Remote Sensing & GIS
2.	Computer Science and Engineering (CSE)	Wireless Sensor Networks, Network Theory, Data Analytics, Quantum Computing in Networks, Federated Learning, Machine Learning, Motion analysis, Computer Vision, Robotics, Cloud Computing, Data Security, 5G, Artificial Intelligence, Data Science, Databases, Data Mining, Big Data Analytics, Health Informatics, Software Engineering, Natural Language processing, Disease Modeling, Network Reconstruction, Social Network analysis, Signal Processing, VLSI Design with AI/ML, AI/ML Algorithms in VLSI Design, Power Efficient system design, Predictive Analysis and Verification for VLSI, Intelligent Synthesis and physical design, CAD for VLSI circuits, Signal and Image Processing, Computer Vision, Robotics, Biomedical Image Processing, Machine Learning and Pattern Recognition, Embedded system Design and IOT
3.	Electrical Engineering (EE)	Power & Energy Systems: Power System Dynamics & Control, Stand Alone power System, Power system operation & Optimization, Renewable energy systems (solar, wind and Hybrid), Probabilistic Power System, Uncertainty quantifications, Deregulation, Distributed Generation, Applications of Energy Storage Devices to Power System. Flexible AC Transmission System, Energy System Planning & Auditing, Loss Allocation, Power Systems Stability & Control. Electricity Market,

		<p>Security Analysis, Fault Detection, Smart Energy Network, Reliability Engineering, Power Systems Analysis and Smart Grid, Failure Analysis, RAMS.</p> <p>Power Electronics & Electrical Drives: Power Electronics, Power Quality, Improved Power Quality Convertors, Custom Power Devices (DSTATCOM, DVR & UPQC), Active Power Filters, Multi-level converters, Matrix converters, Electric Drives, Flexible AC Transmission System, Isolated Bidirectional DC-DC converters, AC – DC Micro grids, Smart Grids, Special Machines & Control, Modulation Techniques, Electric Vehicles, Control of Renewable Energy Systems, Variable frequency transformer.</p> <p>Control & Automation: Control Theory, Model Order Reduction of Linear, Non-Linear, and Parametric systems, Finite Element modeling of Distributed Parameter systems, efficient Algorithms for fast simulation of power electronics circuits & power systems, vector control of electric drives, Disease Modelling, Artificial Intelligence and Deep Learning. Cyber-Physical Systems, Learning Control, Networked Control Systems, Decentralized control, Constrained control systems, Mechatronics. Signal Processing, Biomedical Signal processing, Artificial Intelligence, Image Processing, Signal Processing Applications in Electrical Engineering.</p>
4.	Electronics and Communication Engineering (ECE)	<p>Artificial Intelligence, Analog and Mixed Signal IC Design, RF and Microwave Circuits and Devices, Antenna Design Nanoscale semiconductor devices, Electronic Circuits & Devices, Photonics devices, Semiconductor Opto-electronic Devices Communication Systems & Networks, Optical & Wireless Communication Systems, Image Processing, Signal Processing, Machine Learning, Blockchain, Peer-to-Peer Networks, Neural Networks, Game theory, Computer Vision, Robotics, Pattern Recognition, Data Science and Analysis, 3G, 4G, 5G and 6G Technology, Telecommunication Networks, IoT, VLSI Design, VLSI Circuit Design, Embedded Systems, VLSI Architecture for Signal and Image Processing, DSP in VLSI Circuits, Low Power VLSI Design, High-Frequency Circuit Design, RF Energy Harvesting, Biosensors, MEMS.</p>
5.	Mechanical Engineering (ME)	<p>Additive Manufacturing, Advanced Machining Processes, Nano-Finishing, Ultra Precision Finishing, Machining Sciences, Measurement and Metrology, Metal Matrix Composites, Materials, Boiling and Condensation Heat Transfer, Refrigeration, Two Phase Flow, Fluid Flow, CFD, Solar Energy, Biofuels, Thermal Energy Storage (TES), Renewable Energy, Thermal Aspects of Additive Manufacturing, Thermal Engineering, Numerical Modeling and Simulation, Strength of Materials, Rupture of Ductile Materials. VLSI Circuit Design, Analog IC design, MEMS, and sensors</p>
6.	Applied Sciences (AS) Discipline: Physics (PH)	<p>Nanophotonic Sensors and Devices, Plasmonic in thin films and nanostructures, Fiber Optics, Optical Device Modeling, Optical imaging & instrumentation, Biomedical optics, Digital Holography, Microwave imaging and instrumentation, EM Theory in different media, Antennas and wave propagation, MHD waves & Flow, Holographic Display, Devices and circuits, Applied electronics, Sensors, Embedded systems, MEMST.</p>

7.	Applied Sciences (AS) Discipline: Mathematics (MA)	Convection in Fluids, Heat Transfer, Nanofluids, Ferrofluids, Micropolar Fluids, Non-Newtonian Fluids, Porous Media, Computational Applied Mathematics, Statistical Machine Learning, Complex Systems, Game Theory, Data Science, Computational Optimization.
8.	Applied Sciences (AS) Discipline: Chemistry (CY)	Design and synthesis of new porous materials with metal skeleton and their application in catalysis, chemical technology, host-guest chemistry (molecular adsorption and molecular recognition), electrical, optical, and magnetic properties. Coordination chemistry, Metal-Organic Frameworks (MOFs), Inorganic and Organic Chemistry.
9.	Applied Sciences (AS) (M.Sc. candidates only) Discipline: Environmental Sciences (EVS)	Environmental Science and Engineering, Environmental Biotechnology, Wastewater Treatment, Waste to Energy Conversion

3. Minimum/Additional Educational Qualifications for Admission

3.1 Eligibility Criteria

An applicant possessing the prescribed qualifications as mentioned in the paras below shall be eligible for admission to a PhD programme of the institute. The course as well as University/ Institute/ Organization of qualifying degree must be recognized by AICTE/ UGC or equivalent and will be verified by the Institute before registration.

A. PhD Programme (Full-Time under Institute Assistantship)

Engineering Departments (Sr. No. 1 to 5): (For all Departments):

The application must have a master's degree in engineering / technology in the relevant area of research with a first class or minimum 60% marks (or CGPA of 6.5 on 10-point scale) in the qualifying examination. The applicant must have GATE qualifications/clear the institute written examination (for Institute Fellowship only)

OR

Bachelor's degree in engineering/ technology/BS (4 years)/M.Sc. (in relevant discipline)/ MCA with a CGPA of 8.5 and above on a 10-point scale or 80% aggregate from a Centrally Funded Technical Institute (CFTI)/ State funded institutes/ university. All such candidates must have a valid GATE score. The number of credit courses to be cleared will be minimum 24 credits before comprehensive examination.

Science Departments (S. No. 6 to 9):

Master's Degree in appropriate branch of science with a first class or minimum 60% Marks (or CGPA of 6.5 on 10-point scale) in the qualifying examination.

Candidates with master's degree in science must have qualified in GATE/NET for scholarship. However, the candidates with master's degree in science without GATE/NET can join in PhD Full Time (Self-Financed)/ (Part-Time) program.

- A.1 Candidates with GATE/NET (JRF/LS)/ UGC (JRF/LS) /GPAT/ Inspire Fellow / Sponsored by any equivalent outside agency to get their scholarship as a full-time candidate **need not to qualify** Institute written examination. For all other candidate(s), Institute written examination is to be cleared if they are applying for getting institute assistantship. However, GATE/NET (JRF/LS)/ UGC (JRF/LS) /GPAT/ Inspire Fellow/ Sponsorship from outside agencies or Institute's written Examinations are only for short listing of the applicants. The mere short-listing of an applicant does not confirm admission to a PhD programme. The admission shall be based upon the performance of individuals in the written test followed by "interview / presentation" and availability of the Supervisor in the proposed area of research.
- A.2 For all the Departments', qualifying **GATE is mandatory** for getting **institute assistantship** for the candidates with master's degree in engineering (for such candidates' institute written test is not required).

B. PhD programme (Part-Time)

- B.1 Candidates from organizations which have Memorandum of understanding (MoU) with NIT Delhi.
- B.2 Organizations with Research and Development Laboratories (R&D labs) of National Repute.
- B.3 Regular faculty/ Teaching cum Research Fellow or Scientists from Educational Institutions, Research and Development organizations, and Government Department/ Government Undertaking provided that the applicant possesses the minimum entry qualifications for the degree as given in Sr. No. 3.1A; with the following additional eligibility criteria:
- Bachelor's degree in engineering/ technology with a minimum of 70% marks in aggregate or equivalent CGPA and a minimum of 10 years of work experience (at the level of Assistant Professor or equivalent) in an engineering degree level technical Institute or R&D organization/ industry, and Evidence of master's level R&D work completed.
- The applicant is in position to complete mandatory course requirements along with regular counterparts; the applicant proves to the satisfaction of NIT Delhi that his/her official duties permit him/her to devote sufficient time to research (No Objection Certificate required). Further, the candidate should possess the minimum experience of one year in the above-mentioned organization.
- B.4 Project staff(s)/ student(s) under projects sponsored by DST/UGC/any government agency, industry or centers established from grant in aid from government or international agencies at NIT Delhi may be given administrative clearance to seek admission on full time/ part time basis subject to recommendations of the concerned Principal Investigator of the said Project and approval of Competent Authority. However, he/she must fulfill the eligibility criteria as per Sr. No. B. No relaxation will be given in screening for the applications.
- B.5 The working candidates under this category must be working within 120 kms. The **candidates must complete the residential requirements up to the completion of course work at NIT Delhi**. Part time student category cannot be converted into Full Time category.

- B.6 Faculty/ Technical/ Scientific staff of NIT Delhi, External candidates sponsored by Industry/ Institute having R & D facility recognized by NIT Delhi and possessing the same academic qualifications as that for PhD regular candidates, are eligible to apply for PhD Programme as a part-time candidate. The Part-Time candidate(s) shall be required to submit a **No Objection Certificate** from their Employers stating that the concerned candidate(s) is an employee of that organization and is allowed to pursue his/her research work at NIT Delhi with the residential requirements as per the NIT Delhi norms, and his/her routine work permit him/her to devote sufficient time for research work.
- B.7 For a foreign national candidate who applies through the Ministry of Education, Govt. of India, or Indian Council of Cultural Relations, Govt. of India, are eligible to apply if they possess the same minimum qualifications as required for PhD admission in case of Regular candidates.

Additional Eligibility Conditions for Part-Time PhD Admission

- (i) The applicants should be professionally employed as engineers or scientists in public sector undertakings or government departments or national level R&D organization/national laboratories /industry, having sufficient facilities to carry out research at their place.
- (ii) Regular Faculty of reputed Institutions/Universities/colleges having sufficient facilities to carry out research at their place in the related research area.

All such candidates should have a minimum experience as given in below Table 2 at the level of Assistant Professor or Equivalent as a regular employee in the sponsoring institution/university/college/organization or R&D organization/national laboratory/ industry at the time of applying for admission.

Table 2: Experience Required for Admission to Part-time Ph.D. Programme

S.No.	Qualifications	Work Experience (Post Qualification)
1	M.E./M.Tech. or equivalent	Nil
2	B.E./B.Tech. /M.Sc. or equivalent, from CFTIs/Central Universities	1 Year
3	B.E./B.Tech. /M.Sc. or equivalent, from other than CFTIs/Central Universities	2 Years
4	B.E./B.Tech./M.Sc. or equivalent, and working in NIT Delhi (Project or Regular)	1 Year

The minimum qualification for these candidates is the same as for full-time candidates.

Part-Time candidates are required to submit a **“No Objection Certificate”** on a proper letterhead from the appropriate authority in the organization clearly stating the following:

- The candidate is permitted to pursue studies on a part time basis and will complete the residential requirement as per institute norms.
- That his/her official duties permit him/her to devote sufficient time for research.
- Facilities for research in the candidate’s field of research are available at the candidate’s place of work.

C. PhD programme (Full-Time with Own Fellowship)

Like GATE/NET (JRF/LS)/ UGC (JRF/LS) /GPAT/ Inspire Fellow / received fellowship by some outside agency etc. with all the eligibility criteria mentioned in B1.

D. PhD programme (Full-Time with Self-Fellowship)

Candidates applied for Full-Time with self-finance category. If selected, will not be provided any fellowship/contingency grant by the Institute. The eligibility criteria for this programme will be the same as those for a PhD (Full-Time) as mentioned in Sr. No. B 1. (However, qualifying or appearing the institute written examination is not mandatory for such candidates.

E. PhD programme (Full-Time/Part-Time with Sponsorship)

These candidates are sponsored by recognized Government/Semi-Government R&D organizations for doing research work in the Institute. Candidates are expected to be released for full-time research but did not receive any financial support from the Institute. Sponsorship letters should be brought at the time of written test and/or interview.

An organization having signed research collaboration (MoU) with NIT Delhi may also sponsor a candidate, in such cases minimum residential requirements may be met at NIT Delhi or collaborative institute.

Important Points

- To qualify/ appear the PhD Entrance Examination is not mandatory for the candidates applying for PhD Part-Time/ PhD Full-Time (Self-financed)/ PhD Full-Time (Sponsored) category.
- PhD course work for Executives (having work experience of 15 years or more in Government/ State Government/ Autonomous Bodies/ Reputed Companies) may be conducted through Project Work/ Seminar.
- Candidates admitted to PhD Full-Time (Self-Financed) may be converted to PhD (Institute Fellowship) if they Qualify NET/ GATE examination of concerned discipline before the Comprehensive Examination of the PhD program subjected to the availability of the Institute Fellowship/ Scholarship.
- Merely fulfilling the above minimum eligibility criteria does not ensure the selection or even eligibility for the entrance test/ interview or both.
- Regarding selection, the decision of the Competent Authority will be treated as final and binding.
- SFS PhD candidate is eligible for applying in the fresh PhD programme in the subsequent years for Institute Fellowship. Those candidates should have completed the course work as per the PhD regulation (7 CGPA) and is applicable only before the comprehensive examination. The PhD candidate should not have any unsatisfactory in the End Semester Progress report. The PhD candidate needs to apply through the regular PhD advertisement whenever it is published.
- **Any request will not be entertained to conduct online presentations and interviews.**

4. Student Categories

An applicant seeking admission to the PhD Programme shall be classified under any one of the following categories:

FULL-TIME RESEARCH SCHOLAR

Research Scholar (RS) with Institute Assistantship (IA)

Students under this category are entitled to financial assistance as per the latest Ministry of Education, Govt. of India norms and will be governed by NIT Delhi and Ministry of Education rules & regulations as effective from time to time.

Research Scholar through Project (RSP)

The admission procedure and other requirements for research Fellows (JRFs/SRFs) in various projects/schemes in the institute who wish to enroll for the PhD programme are the same as applicable to research scholars. However, they will be paid Assistantship/fellowships as per the norms of the project and sanctioned amount.

Research Scholar through Govt./ Semi Govt. Fellowship Award (RSFA)/PM Fellowship

These candidates are financially supported under various Govt./Semi Govt. schemes (CSIR, UGC, DAE, DST, DBT, NBHM, etc.) or by some other organizations. The admission procedure and other requirements are the same as applicable to regular research scholars.

Research Scholar through Sponsorship (RSS)

These candidates are sponsored by recognized Government/Semi-Government R&D organizations for doing research work in the Institute. Candidates are expected to be released for full-time research work by the parent organization in order to meet the minimum residential requirements. They will not receive any financial support from the Institute. Sponsorship letter should be brought at the time of written test and/or interview.

An organization having signed research collaboration (MoU) with NIT Delhi may also sponsor a candidate, in such cases minimum residential requirements may be met at NIT Delhi or collaborative institute.

Research Scholar through Self Finance

The Full Time (Self-Financed) category will be governed as per rules for Full Time PhD scholars.

Indian Nationals: This category refers to persons with a good academic record and experience to join in the doctoral programme. They are admitted through the usual admission procedure, but they would not get any financial support from the Institute. If admitted, these students must complete their programme within the prescribed duration.

Foreign Nationals: These students are admitted through the Embassy of the respective country after getting approval from the Ministry of External Affairs and No Objection Certificate from the Ministry of Education.

On Study Leave: This category refers to candidates who are released from the Government or Educational Institutions on study leave for a period not less than three years for doing research work at the Institute.

If selected, Employer's endorsement letter / NOC for Study Leave should be submitted at the time of joining the PhD programme.

Research Scholar through Foreign Nationals with Indian Council for Cultural Relation Award (RSICCR): These students are sponsored and awarded scholarships by their respective Governments. They should apply for admission to the Institute's PhD programme through the Indian Embassy in their country.

PART TIME RESEARCH SCHOLAR

The working candidates under this category must be working within 120 Kms. The candidates must complete the residential requirements up to the completion of course work at NIT Delhi. Part time student category cannot be converted into Full Time category.

Institute Staff (IS):

This category is only for the persons employed as Institute Staff at NIT Delhi on a regular basis.

- i. Admission will be on the basis of written test and interview as applicable to the concerned programme.
- ii. If a candidate is registered under this category but is not continuing his/ her service in the institute, he/she may be considered under the RSSF and not under this category.

Project Staff (PS):

This category refers to candidates employed at NIT Delhi as a part of sponsored projects undertaken by the Institute and admitted to the PhD programme, if the duration of the Project at the time of admission is at least 3 years or more. Under this category the research scholar will be governed by the predetermined norms as mentioned in the project.

External candidates, sponsored by recognized R&D organizations (EX):

- i. The candidates employed in recognized R&D organizations may apply for PhD programmes as external candidates at NIT Delhi while remaining in employment. These candidates will be allowed to register for a PhD with a Supervisor (internal) as decided by NIT Delhi and a Joint supervisor (external) from their parent organization.
- ii. At the time of test/interview, the candidate must submit a Sponsorship Certificate from the organization in which she/he is employed giving an undertaking that the candidate would be released from the normal duties to complete the course work.
- iii. To promote interaction and association among the Institute Faculty and concerned external organizations, a meeting between the internal and external supervisors should be arranged at least once a year to ensure continuous dialogue and participation.
- iv. The option of external registration is for applicants who are working in well-equipped scientific institutions, laboratories, R&D establishments, and industrial organizations engaged in research-based activities and having collaboration with NIT Delhi and other educational institutes not considered otherwise.

5. Admission Process

- i. Candidates with GATE/NET (JRF/LS)/ UGC (JRF/LS) /GPAT/ Inspire Fellow / received fellowship by some outside agency as a full-time candidate need not clear Institute written examination.
- ii. For all other candidates, the Institute written examination needs to be cleared for getting institute assistantship.
- iii. However, GATE/NET (JRF/LS)/ UGC (JRF/LS) /GPAT/ Inspire Fellow/ Sponsorship from outside agency or Institute Examinations are only for short-listing of the applicants.
- iv. Mere short-listing of an applicant does not confirm admission to PhD programme. The admission shall be solely based upon the performance of individuals during “presentation and interview” and availability of the Supervisor in the proposed area of research.
- v. The admission to PhD programme (Full-Time/Part-Time) in all disciplines mentioned in this advertisement shall be made purely based on a “presentation” to be made by the shortlisted applicants in their proposed area of research followed by “interview” to be conducted by the respective Department Admission Committee.
- vi. Short-listing of candidates (other than GATE/NET (JRF/LS)/ UGC (JRF/LS)/GPAT/ Inspire Fellow / received fellowship by some outside agency as a full-time candidate) shall be done by Departmental Admission Committee for the process of “presentation and interview” for the applicants. Only those applicants who score marks above the cutoff of 40%, i.e., 24 marks out of 60 for UR/OBC/EWS category candidates, and 35% i.e., 21 marks out of 60 for SC/ST/PWD candidates in the screening test shall be eligible for presentation and interview process. Marks obtained in the screening test shall not be counted for preparation of final merit list of the successful candidates.
- vii. The Pattern of Examination shall be as of GATE and NET examination. The Written Test will be of MCQ Mode with no-negative marking.
- viii. The Department Admission Committee for each Department shall recommend suitable candidates for admission based on its assessment of presentation and interview. Marks obtained in the screening test shall not be counted for preparation of final merit list of the successful candidates.
- ix. The Department Admission Committee/Institute reserves the right not to recommend any candidate for admission to PhD in the respective Department if the performance of the shortlisted candidates is not found satisfactory during “**presentation and interview**”. The decision of the Competent Authority shall be final.
- x. All the applied/ selected candidates will be governed by the rules and regulations of the PhD Ordinance available at the Institute website. Candidates are advised to read the ordinance clearly before proceeding with the application.
- xi. A candidate interested in applying in more than one department/category shall be required to submit separate application forms along with appropriate fees and documents. At the time of interview no conversion from one category to another to another will be allowed.
- xii. Advertisements for admission to the PhD programme may be published on the website/newspapers (two times in a year) depending upon the vacancy in the department/center and availability of research supervisor(s). The advertisement may/may not include the predetermined number of seats and as per the guidelines of reservation policy of Government of India. A candidate interested in applying in more than one department/ category shall be required to submit separate application forms along with prescribed fees and documents. The candidate shall be required to submit a write-up (1-2 pages) of his/her proposed area of research along with the application form.

Screening Committee

A screening committee for each department will be formed by the respective Head of Department (HoD). An additional member holding PhD degree from the centrally funded institution/ university/ research laboratory of Government of India/ Public Sector undertakings/state funded university/institution or of collaborative organization/ Industries/ Institutes (Indian/Foreign) may also be included in the committee. The committee shall screen all applications for admission to Ph.D. programmes. The committee shall verify the eligibility of the applicant(s) for the programme/ entrance test based upon the details mentioned in the application(s) and the enclosed documents. The committee will have the right to fix higher shortlisting criteria (in addition to minimum qualification) for shortlisting. After screening of applications, the HoD shall forward the list of candidates eligible for the written test to Dean R&C. The Dean R&C shall then consolidate the list of all the departments and notify the eligible applicants through appropriate means with the approval of competent authority.

Entrance Test

The candidates who have not qualified GATE/NET and applied for Full Time with institute fellowships shall be required to appear in a National Level Written Test to be organized by NIT Delhi. The written Test may be of Multiple-Choice Question (MCQ) Mode. A candidate securing at least 40% marks in the Entrance test shall be declared qualified in the test. The syllabus for the written test will be the same as the latest GATE/NET syllabus in the related branch of Engineering/Technology/Science/Humanities.

Interview

The eligible candidates who have qualified for the written test shall be called for the interview. At the time of interview, candidates may be asked to discuss their research interest/area in the form of a presentation.

Interview Committee

The Interview Committee may be comprised of following:

1. Director / Director's Nominee
2. Head of the concerned department
3. Faculty members of the concerned department/other department(s) having PhD degrees.
4. Person(s)*from the collaborative organizations/ industries/ institutes (Indian/ Foreign) who have been approved to act as supervisor.

Keeping in view the available seats, the Interview Committee will prepare and submit a provisional list of candidates recommended for admission to the PhD Programme for the approval of the Director through the office of Dean R&C. The office of Dean R&C shall notify the list of selected candidates through appropriate means.

Reservation

The reservation rules will be followed as per Government of India guidelines prevailing at the time of admission. Category (General/OBC-NCL/SC/ST/PH/EWS) once chosen by the applicant in his/her application form shall not be changed at a later stage. Candidate(s) claiming any reservation category (OBC-NCL/SC/ST/PH/EWS) shall attach a valid caste certificate w.e.f., 1st April of year along with the application.

***Admission process for JRF/SRF hired from Institute Research Project**

A candidate has his/her any scholarship under any outside sponsoring agency e.g., CSIR/UGC/NET-JRF/INSPIRE/etc. then he/she can apply directly into the PhD programme Full-Time at NIT Delhi in the respective department round the year. Other qualifications regarding eligibility will remain the same as NIT Delhi PhD rules and regulations. The candidate needs to attach the consent of respective supervisor(s) from that department. The details of faculty members' research areas for selecting supervisor can be viewed over the institute website. He/ She should fill the PhD application form (PHD-XIII) with the desired documents and submit it into the Dean Research and Consultancy Office (phdadmission@nitdelhi.ac.in), with the approval of honorable director, the following committee recommended his/her admission: -

Dean Research and Consultancy	-	Chairman
Head of the Department, Respective Department	-	Member
Convener, DEPG, Respective Department	-	Member
Proposed Mentor	-	Member

If the candidates will get admission in the middle of semester when course work of newly admitted PhD students is already started, then course work for these candidates will start from the next coming semester. Subsequently, their duration for completion of course work, comprehensive will be extended.

In this case JRF/SRF will move his/her application through PI and HoD to Dean R&C Office, after filling the PhD Application Form completely with desired documents.

After completion of the Fellowship from the project, the Institute will not provide any type of Assistantship/Fellowship.

6. Admission

Candidates whose selection is recommended by the Interview Committee and approved by the Director shall be admitted and advised to deposit prescribed fees. For all purposes, the date of registration of a Research Scholar shall be the date on which she/he has deposited a fee in the institute.

7. Registration

Following are the guidelines for registration in PhD programme:

- i. Candidate is required to register himself/herself (in person) on the scheduled dates of registration. There shall not be any provision of deputing any representative by him/her for registration purposes. Further, she/he shall be required to register in all subsequent semesters till the submission of PhD thesis.
- ii. She/he is required to fill in the registration form and submit it to the DPGC convener.
- iii. She/he shall deposit the requisite fee in the accounts section at the time of registration every semester.
- iv. The act of non-depositing of fees and/or not completing the registration process as mentioned above on the scheduled dates shall be treated as the 'voluntary discontinuation' of studies by the Research Scholar. In such case, she/he will cease to be a bonafide student with immediate effect.
- v. Late registration with the prescribed late fee may be allowed as specified in the academic calendar. However, under special circumstances, the period may be relaxed by the Director/Dean R&C. The candidate is required to follow the registration rules till she/he submits PhD thesis.

- vi. The above instructions for registration shall be applicable to all Research Scholars admitted in the institute.
- vii. Candidates need to produce a Medical Fitness Certificate from a Govt. Hospital at the time of admission.

8. Research Guidance

PhD Supervisor

At least one supervisor of the research scholar shall be from NIT Delhi. A Faculty Member/ Officer/ Scientist of NIT Delhi with PhD degree can act as supervisor.

In case of demise/ any other casualty, the Research Scholar registered under a supervisor shall be transferred to another suitable supervisor(s) in the department subject to the approval of DPGC, RAC.

If a supervisor gets transferred/ re-employed/ deputation/ lien in other department/ workplace/ center or retires/ resigns/ proceeds on long leave from the institute for more than 12 months through lien/ deputation/ sabbatical/other to join other institute, then he/she shall continue supervising the Research Scholar in the department where Research Scholar is initially registered. A co-supervisor/ Program coordinator (if all objectives are completed) will be added after the recommendation of RAC, with due approval.

If a supervisor gets transferred/ re-employed/ deputation/ lien in another department/ workplace/ center/ proceeds on leave from the institute for less than 12 months, the supervisor shall remain the same.

In case the Supervisor is likely to be superannuated within five (5) years from the date of registration of a Research Scholar, he/she shall be allowed to act as supervisor if there is one more regular faculty member from the same department to act as joint supervisor. She/he will act as Co-Supervisor.

Supervisor/Co-Supervisor

Depending upon the nature of the research problem, other supervisor(s) may be allowed in addition to the main supervisor. In such a case, a maximum of two other supervisor(s) may be approved by the Chairman Senate. The Co-Supervisor (in-service or retired) can be from a centrally funded institution/ university/ research laboratory of Government of India/ Public Sector undertakings/ state funded university/ institution of repute or of collaborative organization/ Industries/ Institutes (Indian/Foreign). Depending upon the research area, highly eminent professors/scientists (retired) working in private organizations may also be considered as co-supervisors.

The justification for the addition of Co-supervisor (in between after 1st appoint of supervisor(s)) should be submitted, with the recommendation of the RAC Committee. The application for co-supervisor must be supported with the detailed CV of the proposed co-supervisor(s) (Channel for approval of co-supervisor: Supervisor - DPGC convener - HoD - Dean R&C - Chairman Senate). The consent (on the official letterhead) of the proposed co-supervisor(s) shall be forwarded through the proper channel for consideration. The request for appointment of Co-supervisor(s) may be entertained within 18 months of the first registration of the research scholar. To promote interdisciplinary research in the institute, joint supervisors may also be appointed from other departments of NIT Delhi.

Note: If there are more than one supervisor(s) from NIT Delhi, then all will be called Supervisor(s). However, any supervisor(s) from outside NIT Delhi will be called co-supervisor(s).

Rules for research activities of DST INSPIRE Faculty

1. Thesis supervision:
 - 1.1. DST INSPIRE faculty may be allowed to supervise the research student(s) (Undergraduate, Post Graduate/ PhD etc.) as a independent/joint supervisor.
 - 1.2. DST INSPIRE faculty may be subject to PhD rules at par applicable to an Assistant Professor Grade II of the institute.

- 1.3. Provision for independent supervision may only be considered within first two years of the joining the inspire faculty otherwise option for joint supervision will be considered.
- 1.4. Apart from research, department level responsibilities may be assigned to the DST INSPIRE faculty.
- 1.5. If the DST INSPIRE faculty leaves NIT Delhi, before the completion of project, then:
 - a) In case, the DST INSPIRE faculty was appointed as an independent supervisor, the concerned department may allocate appropriate supervisor(s) for guiding the student(s) until completion of PhD thesis. However, the concerned Head of the department will act as administrative supervisor for the student till the allotment of the supervisor.
 - b) In case DST INSPIRE faculty was appointed as a joint supervisor, the other joint supervisor(s) may be assigned the responsibility for guiding the student(s) until completion of PhD thesis.

Change of Supervisor(s)

Any request from a candidate for change of supervisor(s) is highly discouraged and may only be considered under evidently exceptional circumstances only within 18 months of first registration. The request for change of supervisor(s) will be channeled through Chairman RAC to DPGC convener with his/her recommendations on the basis of statements of / discussion with supervisor(s) as well as research scholar. The DPGC convener will then discuss the matter within DPGC and will forward it to the IPGC convener with clear recommendations. IPGC will then take the final decision on such cases.

However, in such cases, the consent of both, i.e., present supervisor and proposed (new) supervisor shall be essential.

Thesis Supervisor(s)

- (a) Any regular faculty of the institute with at least five research publications in refereed nonpaid journals (SCI/SCIE/Scopus) can be appointed as Supervisor and with at least three research publications in refereed nonpaid (SCI/SCIE/Scopus) can be appointed as Co-Supervisor, only on recommendation of respective DPGC of concerned departments.
- (b) Eligible faculty members, who are to retire within 3 years, can be appointed only as co-supervisors.
- (c) Depending on the problem, a scholar may be assigned not more than three supervisors, designated as supervisor and co-supervisor(s).
- (d) Appointment of any joint supervisor(s) would not be made after a lapse of 18 calendar months from the date of initial registration of the scholar.
- (e) In case of joint supervision, if both supervisors are from NIT Delhi, then the scholar will be counted as half, otherwise will be treated as full of external joint supervision.
- (f) The full weightage for each supervisor/joint supervisor will be counted in case of joint supervision. The supervisor chosen from another institution will need to sign Intellectual Property Right (IPR) agreement and Non- Disclosure Agreement (NDA) as formulated by NIT Delhi.

9. Limit on number of Research Scholars

Preferably, full time PhD (Institute Fellowship) seat allocation for all the faculty members will be followed for the distribution of Full-Time PhD (Institute Fellowship) seats as per following:

S. No.	Designation	*Upper seat cap for Full Time with institute fellowship at any time
1	Professor	2 (two)
2	Associate Professor	2 (two)
3	Assistant Professor	2 (two)

*Preferably, a maximum of 2 candidates with institute fellowship can be taken against a PhD advertisement to keep the maximum limit of having two candidates at a time.

An upper cap has been kept for seat allotment of Full-Time PhD seats with institute fellowship only.

Priority should be given to the faculty having lesser number of research scholars with institute fellowship.

PhD students who qualify in NET(JRF/LS)/ UGC(JRF/LS)/ GPAT/ INSPIRE Fellow/ Sponsored by any external agency etc. to get their scholarships from outside agencies are exempted from the above cap. But it is further directed that at any point of time the number of PhD admitted students of the faculty under these categories is more than 3, they are advised not to take up institute fellowship seats. Self-sponsored and Part-Time students will be also exempted from the above cap.

The full weightage for each supervisor/ joint-supervisor will be counted in the case of joint supervision. A faculty member/ officer can act as supervisor for research scholars registered with any other Institute/ University after getting approval from the Director provided the institute work does not suffer due to the same.

APPOINTMENT OF RESEARCH SUPERVISOR

Following shall be the procedure for appointment of supervisor(s) for any Research Scholar:

- i. After first registration, a Research Scholar must convey desired Research Area(s) to the DPGC convener.
- ii. DPGC convener will suggest Research Scholar the names of faculty member(s) working / interested to guide Research Scholar in that area.
- iii. After interacting with the faculty member(s), the Research Scholar will communicate his/her choice of supervisor(s) to the DPGC convener.
- iv. DPGC shall initiate the process of appointing the Supervisor for Research Scholar after consent of Supervisor and Research Scholar.
- v. All the above processes should be completed within 3 Months of first Registration. The form should be sent to the Dean R&C office through the Head of Department.
- vi. In case, supervisor is not allocated, the Scholar will opt for the course work with consent of DPGC.

10. Residential Period of PhD Programme

The minimum period of residential requirement for study and research at the institute from the date of first registration to the date of submission of synopsis shall be 24 months for full-time and till completion of comprehensive examination for part-time research scholars. A candidate is normally expected to submit his/her thesis within 4 years from the date of first registration. However, this period may be extended to a maximum of 2 more years (on semester to other semester basis upto 6th year) on the recommendations of supervisor(s), RAC and DPGC respectively. The maximum duration of thesis submission will be seven years for a research scholar admitted as a part-time student. However, the maximum duration will remain six years for research scholars admitted as full-time students and later converting to part-time.

The candidate's performance and his/her work progress/publication requirement will be assessed by the RAC after completion of four years to release the scholarship of the fifth year. RAC will recommend the extension of their assistantship into the 5th year by mentioning the remaining essential research work requirement in the fifth year. If a scholar fails to justify his/her work progress in this committee after four years, then he/she will not be eligible for the 5th year scholarship.

Change of Registration: - Full-Time to Part-Time PhD Programme

A Student admitted to a full-time PhD programme may be permitted to change to a part-time PhD programme. A student requesting such a conversion must have completed the coursework, passed the comprehensive examination, and completed the residence requirements. He/She gets the request endorsed by the supervisor(s) and the DPGC. He/She produces a "**No Objection Certificate**" from the Head of the Institution/organization, which he/she proposes to join. If she/he is not joining anywhere, then the recommendation of the RAC committee is required. The decision of the competent authority will be final. Such conversion, if approved by the Dean R&C, will be subject to the following conditions:

- ❖ The student must complete his/her thesis within 7 years counted from the date of his/her first registration in the programme.
- ❖ Provision of conversion from full-time to part-time status can be availed only once by the student during his/her programme and the status of the student will be reviewed by the RAC as per PhD Regulations.
- ❖ In any case conversion from part-time to full-time is not possible.

11. Course Work

MINIMUM CREDIT AND CGPA REQUIREMENTS

- i. Every external/ internal research scholar (Full Time/ Part time) admitted under PhD Programme is required to pass the course work approved by RAC & DPGC within the first two semesters only. For credit requirements see table given below for details.
- ii. Research Scholar must secure a minimum of 7 CGPA for clearing the course work. Only successful PhD candidates will be allowed to continue in the PhD programme. The relative grading system like M. Tech programmes shall also be applicable to PhD programmes.
- iii. If a research scholar fails to get a CGPA of 7 at the end of the course work, she/he may be allowed *only once* to appear in specially conducted end-semester examinations for a maximum of two theory courses within one month of the declaration of result. In such cases, the marks of continuous evaluation and mid- semester examination will remain unchanged. The new end-semester marks will replace the old end-semester marks of the same course. The new grade will replace the old grade obtained in that course.
- iv. Only courses completed after the date of first registration shall count towards the requirement for the award of PhD degree. Furthermore, research scholars must not have studied any of these courses during earlier studies at NIT Delhi.
- v. The research scholar with the approval of DPGC can complete the requisite course work either at NIT Delhi or any other organization/ industry/ institute (Indian/ Foreign) having MoU with NIT Delhi.
- vi. PhD course work for Executives (having work experience of 15 years or more in Government/ State Government/ Autonomous Bodies/ Reputed Companies) may be conducted through Project Work/ Seminar.

COURSES

Research Scholar will have to take a mandatory theory course on Research Methodology (3 credits). The course on Research Methodology should be taught Department wise. Accordingly, the syllabus of Research Methodology should be prepared Department Wise. Other specialized theory courses as per credits-requirement may be opted on the recommendation of the supervisor(s), RAC, and DPGC as the case may be. A seminar course (1 credit) must be taken in each of the first and second semesters. Research Scholar may opt for courses being offered at MTech level. Credit transfer from other CFTI/State Government institutions may be allowed after considering the mapping of credits by RAC.

However, the courses already studied by him/her at UG or PG level at NIT Delhi may not be chosen for course work. The cumulative course work requirement is as follows:

Particulars	Minimum Credits Requirement	Details
<i>PhD in Sciences/Humanities for candidates with M.Sc./M.Phil./MTech./M.A. degree</i>	14	RM (3 credits) + 2 Seminars (2credits)+ 3 Specialized courses (minimum 9 credits)
<i>PhD in Engineering for candidates with MTech</i>	14	RM (3 credits) + 2 Seminars (2 credits)+3 Specialized courses (minimum 9 credits)
<i>PhD in Engineering for candidates with B.Tech./MCA/ MSc (in engineering departments)</i>	24	RM (3 credits) + 6 Specialized Courses (minimum 18 credits) + 3 Seminars (3 credits)

(RM: Research Methodology)

Note:

1. PhD students can opt for as many courses for course work even after completing required credits as an audit course/registered course.
2. Online courses (audit/registered) like NPTEL may be introduced as the main credit courses (upto 2 courses) to the PhD students where the instructor at NIT Delhi will do only the evaluation but no classes will be taken by him/her.
3. Research Methodology subject may be taken by the faculty member from any department of NIT Delhi and a common timetable will be followed for all branches. Research Methodology course will be treated as regular teaching load for a teacher.
4. A minimum of two subjects will be taken by scholars from the existing MTech. regular courses running in the institute from any of the departments.
5. Maximum one subject may be allowed to be taken from NPTEL/MOOCs/Online course or by the supervisor as per requirement of scholar research area.
6. Two credits from the seminar are compulsory for a scholar to complete the total 14 credits with MTech or equivalent qualification.
7. Credits requirements for PhD course work will be as per the applicable ordinance of PhD program for scholars admitted with M.Tech/B.Tech or relevant qualifications.
8. PhD scholar admitted with B.Tech qualification, maximum two subjects may be allowed to be taken from NPTEL/MOOCs/Online courses and rest required credits to be obtained from the regular MTech courses run by any department of NIT Delhi.
9. Departments having No PG program may be allowed to offer courses considering the research area of scholar and credit requirements as per applicable ordinance by the recommendation of the RAC.
10. Evaluation of NPTEL/MOOCs/Online course (if any) will be done by the supervisor.

CREDIT TRANSFER

The credits earned (after the date of first registration in PhD programme at NIT Delhi) at the collaborative organizations/ industries/ institutes (Indian/ Foreign) having MoU with NIT Delhi may be waived off at NIT Delhi.

ATTENDANCE

The Attendance requirement in each course shall be 75%. However, if the Research Scholar is pursuing his/her requisite course work at any other place of collaborative organization/ industry/ institute (Indian/ Foreign), the corresponding attendance criterion of that organization/ industry/ institute (Indian/Foreign) must be fulfilled.

12. Leave Rules

GENERAL LEAVES

The Research Scholar is required to carry out his/her research work regularly under the guidance of the supervisor(s), without any interruption during the period he enjoys the assistantship.

- a. **Medical Leave:** Leave on medical grounds, duly supported by a medical certificate from the Institute Health Centre/ Chief Medical Officer of the Govt. Hospital, may be granted to a student for up to eight days per semester.

However, at a stretch, the medical leave shall not exceed 15 days. Such leave shall not entail any loss of financial assistantship. In case the students require more leave as advised by the medical officer his/her registration shall stand automatically withdrawn for that semester.

- b. The Research Scholar may be eligible for Maternity/Paternity Leave with Assistantship as per Govt. of India notification released from time to time.
- c. Any leave not availed shall not accumulate for next year.
- d. A full-time PhD scholar may avail 8 casual leaves and 2 leaves in lieu of RH percalendar year.
- e. The maximum period of absence from work without proper and prior approval from competent authority shall be 15 consecutive days after which a reminder/warning will be issued to the research scholar by the IPGC in consultation with supervisor(s), DPGC and HoD. In case of no response from the research scholar the process of termination of registration shall be initiated. If a research scholar remains absent without prior approval for a duration between 5 and 14 days, then his/her stipend for the whole month(s) may not be paid. The channel for such cases will be the same as for General Leaves.
- f. The intervening holidays will be treated as part of leave with the provision of suffixing and prefixing holidays. In no way, the leave rules would affect the attendance requirements for the Research Scholar.
- g. The scholar will not be entitled to mid-semester breaks/ vacations, summer and winter vacation. Any absence from the institute without sanctioned leave may lead to loss of fellowship for the period of absence.

EXCEPTIONAL LEAVES (upto 60 days)

- a. Full time PhD scholars may avail themselves of the duty leave for attending two reputed conference/ workshop/ academic events per semester.
- b. For the collection of data / visit to other organization/research labs/ hospitals etc., full time PhD scholar may avail the duty leave/s after duly approval from Supervisor/ HoD without affecting their regular TA duties.

Exceptional Leaves (for Research Work):60 days/year may be allowed on following grounds:

- a. Such leaves can be availed only after successful completion of their course work and after adjustment of teaching assistantship (TA) work is assigned.
- b. To avail these leaves Research Scholar must attach the detailed plan of research activities/testing etc. to be carried out during the period of leave. A permission letter from the collaborating organizations/Institutes/Industries etc. where Research Scholar intends to visit also needs to be attached.
- c. In case leave of more than 60 days is extremely necessary for the research work then the final decision will be taken by the Dean R&C with the approval of competent authority. A recommendation letter from the supervisor(s) and RAC, clearly elaborating the necessity of the leave must be enclosed along with the application and desired documents. It can be allowed upto 6 months in a PhD tenure including these 60 days.
- d. No TA/DA/additional financial assistance will be provided. All leaves should be applied through proper channels and will be in advance.

13. Institute Post-Graduate Committee (IPGC)

There is an Institute Post-Graduate committee in the institute to oversee/monitor/decide on all matters related to the PhD studies. IPGC has the right to take *suo moto* cognizance on any matter related to postgraduate studies.

The following will be the composition of IPGC:

- i. Chairman will be a professor (on rotation basis)
- ii. One Professor and one Associate Professor (on nomination basis)
- iii. Concerned HoD
- iv. Concerned supervisor.

14. Department Post-Graduate Committee (DPGC)

Each Department has a DPGC consisting of HOD and the faculty members holding PhD as the members (nominated by the HoD). There shall be a DPGC convener nominated by the HoD. The main functions of DPGC are as follows:

- Allotment of supervisor(s) and formation of RAC for each research scholar.
- Overall monitoring of course works of the research scholar.
- Change/reform the RAC at any stage, with proper justification.
- To approve/disapprove the end semester progress report, comprehensive procedure, synopsis and thesis submission or any other appropriate matter forwarded by the RAC of the research scholar.

The following will be the composition of DPGC:

- i. Head of the Department (or his/her nominee) (Chairman)
- ii. Convener DPGC (Convener)
- iii. All Professors of Department (Member)
- iv. 2 Associate Professors from the Department (Consider Assistant Professor, if Associate Professor not available) (Member)
- v. 1 Assistant Professor from the Department (Member)

15. Research Advisory Committee (RAC)

There will be a separate RAC for each research scholar. The RAC shall be constituted within one month of the appointment of supervisor. DPGC will form the RAC on recommendations of supervisor(s). The supervisor will initiate the formation of RAC.

Composition of Research Advisory Committee

The following will be the composition of RAC:

- i. Chairman, Dean Research & Consultancy (or his/her nominee)
- ii. Head of Department or his/her nominee (Member)
- iii. External Subject Expert (not less than at the rank of Professor in the relevant area) (Member)
- iv. Subject Expert from the Department (Member) (from internal/external department)
- v. PhD Supervisor(s) (Member)
- vi. Convener, DPGC Concerned Department

Functions of Research Advisory Committee

RAC will have the following main functions.

- i. Conduct the End Semester presentations after every semester to monitor the progress of the candidate and forward it to the DPGC convener.
- ii. After the completion of a comprehensive examination, it is compulsory to involve an external expert once a year in the End Semester presentations. Before the comprehensive examination, external expert presence in RAC is not required in the End Semester presentations.
- iii. Conduct the complete comprehensive procedure of the research scholar and communicate the final recommendations to DPGC (external expert must present).
- iv. Monitor the progress of research scholars at the end of each semester to conduct the pre-PhD presentation and synopsis submission of research scholars and communicate the final recommendations to DPGC.
- v. To consider any other appropriate matter related to the corresponding research scholar.
- vi. The external subject expert must be invited at least once a year. However, his/her presence is compulsory during oral comprehensive examination and pre-PhD seminar.

16. Comprehensive Procedure

The comprehensive procedure of the research scholar shall be held after successful completion of course work.

An oral *State-of-the-art* presentation, along with the submission of a detailed research proposal must be conducted within 18 months from the date of initial registration and after completing the desired course work, before RAC. The Presence of External Expert in the comprehensive exam is mandatory.

If RAC is not satisfied with the Research Proposal/ *State-of-the-art* Presentation, research scholars may be given a maximum of one chance to present the research proposal within six months. During this period the scholar will not be entitled to get stipend, further it may be released after successful completion of comprehensive examination, with the recommendation of RAC.

The research proposal should have the following sections:

- i. Introduction
- ii. State-of-the-Art
- iii. Research Significance
- iv. Scope and Objectives
- v. Methodology
- vi. Time Schedule
- vii. Key References

After a second attempt in a comprehensive examination, if a candidate fails, then his/her registration will be canceled.

The title page should contain the proposed title of the research, name and roll number of the Research Scholar, name(s) of the supervisor(s), department, institute, month, and year of submission.

The total number of pages of the proposal should not be less than 15 inclusive of the title pages typed written in Times New Roman, 12-point font size for regular text, and appropriate font size for headings and formatting.

Evaluation of Comprehensive Examination

Every scholar is required to submit his/her research plan proposal. The research plan proposal should include a brief account of the related work already reported in the literature. In the plan, the scholar should clearly spell out the investigation/ work he/she intends to carry out and justify the need of the same. Subsequently, the research should be carried out in accordance with the approved research plan. Any change in research plan can be indicated by a research scholar in semester progress reports. It is a closed examination in front of the respective RAC.

The following procedure is followed for conducting the comprehensive evaluation of the PhD scholars:

- a. Every scholar is required to take a comprehensive examination, which will test his/her readiness in a board field of research, academic preparation and potential to carry out the research. The comprehensive examination shall be based on a presentation in front of RAC.
- b. Every scholar must pass the comprehensive examination within 12-18 months of his initial registration. He/she should apply preferably 15 days in advance for a comprehensive examination through his/her supervisors. In case of any justified delay in research beyond the specified period, candidates may request Dean R&C through RAC for an extension of comprehensive examination. Such extension may be allowed for a maximum period of six months only.

Junior Research Fellow (JRF) to Senior Research Fellow (SRF) Conversion

All the regular full-time PhD students which availing of Institute Fellowship shall be eligible for upgradation from Junior Research Fellow(JRF) to Senior Research Fellow(SRF) after the completion of 02(two) years provided that the comprehensive is duly presented and approved. Further, a recommendation of RAC of student is required for JRF to SRF conversion.

17. Confirmation of Candidacy/Topic Registration

The candidacy of a PhD student will be confirmed for the PhD degree after successful completion of course work and comprehensive procedure. Candidacy for the PhD degree shall be effective, normally from the date of first registration and shall remain valid for a period of 06 (six) years for Full Time and 7 years for Part Time candidates. The candidacy of a candidate may be deferred by the RAC on account

of unsatisfactory progress. A candidate is required to submit the thesis before the expiry of the registration period. In the event of the candidate failing to submit the thesis within the period, the registration shall lapse automatically.

18. Progress Evaluation

- i. At the end of each semester, there will be progress evaluation by the RAC, which will recommend whether the research scholar's performance is satisfactory/unsatisfactory. For this presentation a PhD scholar should share his/her report with all the RAC members in advance.

The supervisor shall record the comments of RAC and the result of his evaluation as satisfactory/unsatisfactory. After recording the evaluation result, the supervisor shall forward the progress report to Chairman, RAC who will apprise the RAC.

A part time scholar must submit his/her progress report to his/her supervisor personally and make himself/herself available for necessary discussions with the supervisor.

In exceptional cases, the Dean, with the approval of the Director may condone the delay in submission of the progress report of up to one month.

- ii. The candidate shall be allowed to register for the subsequent semester only after the timely submission (as mentioned in the academic calendar) of his/her satisfactory progress report by the DPGC convener through HoD to the office of Dean R&C.
- iii. If the research scholar gets one unsatisfactory feedback in the end semester progress presentation, she/he will be issued a warning to improve the performance in the next semester. However, she/he may be allowed to register for the next semester.
- iv. After the first unsatisfactory progress report, the student will be allowed to continue the PhD programme without assistantship/stipend.

In case of two consecutive unsatisfactory performances by PhD scholars in the End Semester Presentations, a RAC meeting with the external expert will be conducted to decide about the PhD scholar. The RAC committee may recommend the termination if they decide. At the time of submitting a stipend form a progress report during that period should be submitted along with a form which will be maintained by the department.

After getting satisfactory progress by RAC, the stipend of the concerned student may be immediately started from the first day of next calendar month (not from next semester) subject to fulfillment of all other necessary conditions.

The progress report should cover:

- i. summary of the work done before the start of the semester under consideration
- ii. the goals for this semester
- iii. the methodology used in achieving the goals.
- iv. the extent of fulfillment of the goals

A PhD scholar should deliver his/her end semester progress presentation in front of the respective RAC. Respective Supervisor(s) need to submit the signed progress report in the office of Dean R&C before the registration fee submission and next semester registration as per the academic calendar. If any PhD scholar fails to do so, then he/she may not be allowed for the next semester registration.

19. Pre-PhD Presentation and Synopsis Submission

- i. Submission of synopsis to RAC can be done only after completing the minimum publication requirement: Three (03) publications (published or accepted) resulting from original research (not review articles) in refereed SCI/SCIE/ESCI indexed journals/ACM Transactions/IEEE Transactions. It is also mandatory for PhD scholars to present a minimum of two papers in the

reputed national/ international conferences or seminars during the PhD program. (If any existing PhD student registered before or on June 8th, 2023, has 02 desired publications only then he/she need to get approval from the Hon'ble Chairman Senate for his pre-PhD.)

- ii. Submission of synopsis is compulsory to the R&C after approval of which the Pre PhD presentation will be held. The Synopsis should preferably contain the following sections: Introduction, State-of-the Art, Objectives, Methodology, brief Analysis of Results, Conclusions, References and List of publications.
- iii. The title page should contain the title of the research, name and roll number of the Research Scholar, name (s) of the supervisor (s), department, institute, month, and year of submission. The total number of pages of the synopsis is limited to 15 inclusive of the title pages.
- iv. RAC will hold the Pre-PhD seminar to an open audience minimum 15 days after synopsis submission. The presentation will test the candidate's depth of knowledge and progress in his/her research work. If RAC is not satisfied with the quality of the work or the general preparation of the Research Scholar, he/she will have to reappear for the Pre-PhD seminar within a maximum period of six months.
- v. The final title of the thesis shall be approved by RAC in pre-PhD seminar/synopsis submission.

Time Period Requirement for thesis submission

- a) The minimum period for thesis submission shall be three years for a full-time scholar, and four years for a part-time scholar after initial registration.
- b) The maximum period for submission of the thesis for a full-time scholar is five years, and that for a part-time scholar is six years from the date of initial registration for PhD programme.
- c) However, a scholar may be considered for extension beyond this period only if he has published/ received acceptance of at least one research paper out of his research work in non-paid peer reviewed SCI/SCIE/Scopus Journals.
- d) On the recommendation of the RAC and the Dean R&C, registration of the scholar may be extended up to a maximum period of six years for full-time and seven years for part-time scholars by the Director.

After that the registration shall be canceled automatically and the candidate may re-register himself/herself as per the rule of registration.

20. Submission of Thesis

Thesis can be submitted within six months from the date of notification of approval of pre-PhD synopsis by supervisor to Dean R&C office in the applicable format.

The thesis shall be written in English in the specific format and shall contain a critical account of the candidate's research. However, if the research scholar wishes to write thesis in Hindi or other regional language then she/he must provide an English version of the thesis (subject to the check of consistency of thesis content in both versions) for external examination. It should be characterized by discovery of facts or fresh approach towards interpretation of facts and theories or significant contribution to knowledge of development or a combination of these. It should bear evidence of the candidate's capacity for analysis and judgment as well as his ability to carry out independent investigation, design, or development. A PhD thesis should be supplemented by published work as mentioned above.

All PhD theses submitted will have to be checked through Plagiarism software and the corresponding

certificate for the same will have to be submitted along with the thesis. Only those theses having similarity index less than or equal to 20%, shall be considered for evaluation and award of degree. No part of the thesis or supplementary published work should have been submitted for the award of any other degree.

21. Evaluation of Thesis

The supervisor(s) will first contact the potential external examiners with the PhD synopsis to take their informal consent preferably via email. After getting the informal consent, the supervisor(s) shall forward a panel of EIGHT external examiners consisting of FOUR foreign examiners and FOUR Indian examiners with a summary of their research expertise (in a sealed envelope) through HoD to Dean R&C. The examiners must be expert in the research area and preferably, their names may appear in the list of "References" in the PhD thesis submitted by the Research Scholar out of which the Director shall appoint one foreign examiner and one Indian examiner for the evaluation of PhD thesis. Respective Supervisor(s) should also be one of the examiners of the thesis. The Office of Dean R&C will obtain the formal consent from the appointed examiners. The Director is empowered to amend the panel of external examiners submitted by the supervisor(s).

- ❖ The Indian Examiners must be from IITs/IIITs/NITs/CFTIs/R&D Lab/Industry/Institute of repute at least at a rank of Associate Professor. The Indian Examiners should be an authority in the concerned area of research i.e., enough publications must be referred to in the thesis.
- ❖ Out of which the Chairman, Senate, shall appoint one foreign examiner and one Indian examiner for the evaluation of PhD thesis. The Dean R&C will obtain the willingness from the appointed examiners by sending them a copy of synopsis submitted by the Research Scholar. The Chairman, Senate is empowered to amend the panel of examiners submitted by the research supervisor(s).
- ❖ Main supervisor as the third examiner.

Submission of Soft Copy and spiral binding of Thesis

All PhD students will follow the procedure for submitting the thesis to NIT Delhi for smooth uploading onto the Shodhganga portal. It is mandatory for all PhD students to split their thesis as per the Shodhganga format (attached) and submit it in soft copy with multiple files as mentioned in the format. Additionally, a DVD with similar files of the thesis should also be submitted including a single file.

To facilitate the submission process, we have created a dedicated drive where you can upload the soft copy of your thesis in a single file and splitted files as per attached format:

Please use the following link to access the drive: [Drive link:

https://drive.google.com/drive/folders/123Q1VBoh_cZbh6kSPtQnTx8G6XLCX5Cb?usp=sharing

A student should submit two copies of the spiralbound thesis to their supervisor(s). The supervisor will send the thesis along with the examiner list to Dean R&C, with the softcopies of synopsis and thesis also. The evaluation report of the thesis must include:

- i. Definite statement as to whether the thesis is acceptable or not acceptable for the award of PhD Degree.
- ii. List of questions to be asked or clarifications to be sought from the Research Scholar during the *viva-voce* examination.
- iii. A detailed statement regarding the quality of the work undertaken.
- iv. In case the examiners feel that definite Revision of the thesis is required or, the thesis is not acceptable in the present form and must be completely re-written due to inappropriate quality of research work, it should be clearly stated.

After receiving the examiners' reports, the Photostat copies/through e-mail of the reports shall be

forwarded to the concerned research supervisor(s) by Dean R&C. The research supervisor(s) shall send his/her comments to the Dean R&C for further action.

If any examiner(s) asks for complete/partial revision of the thesis, the Research Scholar will be asked to re-submit the thesis after incorporating the necessary changes in light of the comments of the examiner(s) within a period of six months. The re-submitted thesis may be sent to the same examiner(s) again for evaluation, if deemed necessary.

If any examiner(s) recommend the thesis for the award of PhD degree, subject to minor changes, the Research Scholar will be asked to re-submit the thesis after incorporating the changes in light of the comments of the examiner within a period of three months. The re-submitted thesis may be sent to the same examiner(s) only if the Examiner(s) has mentioned it in his/her report(s).

In case all the examiners give positive/favorable reports, the thesis will be considered accepted. However, if one of the examiners gives a positive/favorable report and the other rejects the thesis, then another copy of the thesis shall be sent to a third examiner (same set of examiners) appointed by the Director from the panel already given by the Research Supervisor(s). If the report of the third examiner is found positive/favorable, then the thesis shall be considered accepted. In case the third examiner rejects the thesis, then the Director will decide (on the basis of the reports of examiners), whether the thesis is to be rejected/or referred again to a new set of examiners for a fresh evaluation.

In all other cases not covered by the above regulations, the matter will be referred to the IPGC for consideration.

A Research Scholar whose thesis has been accepted for the award of PhD degree shall be required to appear in the **Open House *viva-voce* Examination** which will be open to all.

After satisfactory performance of the Research Scholar in the open house *viva-voce* examination, this committee shall forward its recommendations to the Director through IPGC convener for the award of PhD degree to the Research Scholar. Director will recommend to the Senate for the award of a PhD degree to the successful Research Scholar.

The Research Scholar is required to submit at least five hardbound copies (in case of one supervisor) of his/her PhD thesis as per the approved format along-with its soft copy (in a CD/DVD) in PDF format attached with each of the copies. The distribution of these copies is as follows:

- i. Central Library
- ii. Departmental Library
- iii. Research Scholar personal copy
- iv. Each Supervisor
- v. Dean R&C

Research Scholar should also submit a checklist at the time of final hardcopy submission.

In case the Research Scholar fails in the open house *viva-voce* examination, he/she may be permitted to reappear in the open house *viva-voce* examination later (approved by the Director) after the recommendation has been made by the IPGC convener on the basis of report of the panel.

If the open house *viva-voce* examination committee/panel finds that the performance of the Research Scholar is not satisfactory even on the second occasion, the matter will be referred to the Institute Senate for further course of action.

Following the successful completion of the evaluation process and announcements of the award of PhD the Institute shall submit a soft copy of the PhD thesis to the UGC within a period of thirty days, for hosting the same in INFLIBNET, accessible to all Institutions/ Universities.

On successful completion of the Open House *viva-voce*, the office of Dean R&C will issue a notification in this regard. Thereafter, the research scholar shall be issued a provisional certificate certifying to the

effect that the Degree has been awarded in accordance with the provisions of UGC Regulations-2009 for Minimum Standards and Procedure for Award of PhD Degree.

It is mandatory to electronically submit the copy of PhD thesis in the digital repository 'Shodhganga' set-up at the Information and Library Network (INFLIBNET) center (An autonomous inter-university center of UGC).

22. Award of Degree

Thesis should be submitted in the library (hard as well as soft copy of the final accepted version). A PhD student who has satisfactorily completed all the prescribed requirements and has cleared all fees and dues payable to the Institute shall be eligible for the award of the PhD degree of the Institute. The degree may be formally awarded in the next convocation.

23. Stipend-cum-Teaching Assistantship/ Scholarship and Contingency Grant

- i. All students admitted to the PhD programme are eligible for institute teaching assistantship (TA)/assistantship from other funding agencies.
- ii. In case of unavailability of hostel accommodation on the campus, the Research Scholar may reside outside. Such candidates are entitled for House Rent Allowance (HRA) as per Government of India rules.
- iii. The tenure of an institute assistantship shall be as per Ministry of Education guidelines in this regard.
- iv. After completion of four years from the date of registration, extension for award of stipend shall be granted, if recommended by RAC based on the progress of the concerned PhD scholar. All supervisor(s) are requested to encourage the PhD scholar to submit within a time period of 04 years (maximum) from their date of registration. No scholarship/contingency shall be awarded after 05 years from the date of registration.
- v. In the final year, however, the extension may be granted by RAC not more than six months at a time subject to the Research Scholar's satisfactory performance at seminar delivered to RAC embodying the progress of the work during the last six months.
- vi. Grant of a six-monthly installment of the tenure is subject to actual requirement of the work and has to be duly certified by the RAC after assessing the progress of the work presented through a written report and seminar.
- vii. The tenure of the assistantship awarded to a Research Scholar will terminate with effect from the day following the date of thesis submission, provided she/he has not left the Institute earlier and has been working in the Institute till date. However, she/he may be allowed to draw assistantship for a further maximum period of three months to complete any unfinished part of study strictly related to her/his research work on the recommendation of the RAC and approval of the Dean R&C.
- viii. The last month's assistantship shall be released on production of a "No Dues Certificate".
- ix. Notwithstanding anything contained in the forgoing sub-paragraphs, continuation of assistantship from month to month is subject to Research Scholar's good conduct and continuous progress of research work to the satisfaction of the supervisor(s), HoD, and other concerned authorities.
- x. Stipend cum Teaching Assistantship/ Scholarship and Contingency grant to the candidate working under the Sponsored Projects coordinated by the faculty of the institute shall be given as per the terms and conditions of the project.
- xi. Research scholars with institute assistantship must submit the scholarship every month through proper channels and should have satisfactory performance in TA duties and thesis work to get the stipend for the respective month.
- xii. No PhD student will get stipend/assistantship/fellowship for more than two sources, Government of private.

24. Remuneration to Examiner(s)/ Supervisor(s)

The remuneration payable to each examiner(s)/ supervisor(s) shall be decided by the Institute from time to time.

25. Withdrawal from PhD Programme/Semester/Courses

If a PhD scholar apply for withdrawing his/her admission form the PhD programme before the completion of his/her comprehensive examination (if comprehensive examination is done, then he/she must have at least one SCI paper), then he/she should refund the institute fellowship upto that period.

A research scholar may be permitted to withdraw by the Dean R&C from all the courses registered by him/her or the entire semester, on medical grounds supported by a medical certificate from the Chief Medical Officer. The medical certificate issued by a registered Medical Practitioner will also be acceptable in those cases where the scholar has valid reasons for his/her absence from the Institute. Withdrawal may also be granted by the Dean R&C provided he/she is convinced that the scholar cannot pursue his/her studies for reasons beyond control.

Under no circumstances will a request for withdrawal be entertained after the end semester examinations have begun. Student/Candidate should present the medical certificate in support of his/her absence for health reasons within two days of his/her rejoining the Institute, if not produced already. Withdrawal will not be granted retrospectively.

The period of authorized absence in the semester should not be less than eight weeks of contact period for Semester withdrawal to be granted. Regularly attending the classes and satisfactory performance in the minor(s) if any, held prior to the date of application for withdrawal are the factors which would be considered while recommending/ granting withdrawal.

Any semester withdrawal will count towards the maximum limit of thesis submission.

26. Discipline

The NIT Delhi is committed to fostering integrity and ethics in the conduct of research. All members of the research community including staff, research staff, students, fellows, adjunct faculty, and visiting researchers, are expected to adhere to the highest ethical and professional standards as they pursue research activities.

- i. The Research Scholar is required to observe proper discipline and decorous behavior both inside and outside the campus. She/he should not indulge in an activity, which leads to lowering the prestige of the institute.
- ii. Any act of indiscipline on the part of a Research Scholar and/or research misconduct by any person as mentioned above, which is reported to Dean R&C, will be referred to the Discipline Committee of the Institute from time to time. The Committee will investigate the charges. If the charges are sustainable, it will recommend suitable punishment for the same to the director. The decision of the director will be final in this regard.
- iii. The willful absence from institute, without prior approval, for fifteen consecutive days will be treated as serious indiscipline and the action may be taken which may amount to termination of registration.

27. Regarding Travel/Registration Support

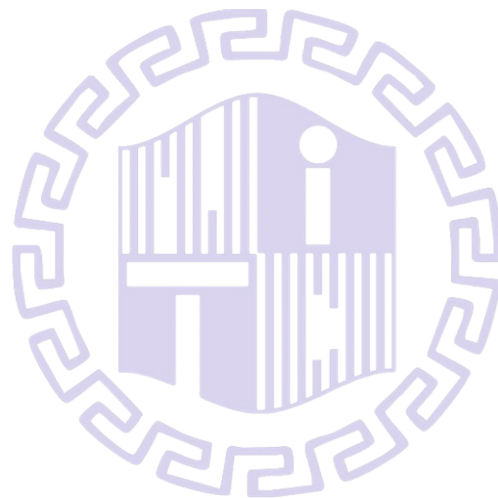
A research scholar who is going to present his/her research paper in any conference may be given travel grant with registration on following conditions:

- ❖ The Office of Dean R&C is in the process of maintaining separate Research and Constancy Accounts which will hold a fraction of the amount from sponsored projects and consultancy as per institute norms. The students of only those faculty members shall be eligible to avail travel grant who have contributed to this R&C account from the institute overhead of their sponsored research projects and/or consultancy, subject to availability of such fund.

- ❖ Research Scholar/supervisor should be first author in the research paper.
- ❖ Research Scholar should be registered at NIT Delhi.
- ❖ Registration amount upto Rs. 5,000/- will be reimbursed and TA/DA as per institute norms.
- ❖ Department/Supervisor will maintain the record of such number of papers.
- ❖ Travel Grant will be allowed upto 2 times in his/her PhD tenure.
- ❖ Application should be processed through:
his/her supervisor → Convener, DPGC → HoD → Dean R&C.

28. Right to Amend the Regulation

The Director/Chairman Senate shall be empowered to modify or append any regulation(s) from time to time or in case of any dispute.



Annexure -A: Different Forms for Research Scholars

S. No.	Form Number	Particulars
1.	PHD-II (A)	Application For the Appointment of Supervisor(s)
2.	PHD-II (B)	Faculty Members Working/Interested to Supervise
3.	PHD-II (C)	Consent Letter from Faculty
4.	PHD-II (D)	Allotment of Supervisor(s)
5.	PHD-III	Application For Courses to Be Completed
6.	PHD-IV	Formation of Research Advisory Committee
7.	PHD-V (A)	Request By Student for Comprehensive Procedure
8.	PHD-V (B)	Notification For Comprehensive Procedure
9.	PHD-V (C)	Report on Comprehensive Examination - Written and Oral
10.	PHD-VII	End Semester Progress Report of Research Scholar
11.	PHD-VIII	Pre PhD-Presentation Report
12.	PHD-IX (A)	Candidate's Declaration
13.	PHD-IX (B)	Plagiarism Verification
14.	PHD-IX (C)	Supervisor's Certificate for Exclusion of Self-Published Work
15.	PHD-X	List of Examiners
16.	PHD-XI	Report of Viva-Voce Examination for award of PhD Degree
17.	PHD-XII	Final submission of Thesis
18.	PHD-XIII	PhD application form