



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 (Shiksha Mantralaya), Govt. of India)
 Plot No. FA7, Zone P1, GT Karnal Road, Delhi-110036, INDIA
 दूरभाष/Tele : +9111-33861000, 1001, 1005 फैक्स/Fax: +9111-27787503
 वेबसाइट/Website: www.nitdelhi.ac.in

Rolling Advertisement for Admission to Ph.D. Programme
 (Spring Semester, Academic Year: 2022-2023)

Advt. No.: NITD/ACAD/02/Ph. D (2022-23)

Online Applications are invited for admission to Ph.D. (Full-Time/Part-Time/Sponsored) programme at NIT Delhi for the AY 2022-2023 in the following Departments for Spring Semester 2022-2023. Applicants have to apply online (via Google Form), as mentioned in the “**Procedure for Online Application/ How to Apply**” Section. **Cut-off date for the candidates applying for the Institute Fellowship is January 31, 2023. However, the candidates with their own fellowship (CSIR/ UGC – JRF/ SRF/ INSPIRE/ Project fellows etc.) and Part-Time/ Self-Financed may apply until 31.03.2023.**

S. No.	Department	Discipline/ Area of Research
1.	Civil Engineering (CE)	Refer Table I
2.	Computer Science and Engineering (CSE)	
3.	Electrical Engineering (EE)	
4.	Electronics Communication & Engineering (ECE)	
5.	Mechanical Engineering (ME)	
6.	Applied Sciences (AS)	Physics (PH)
		Mathematics (MA)
		Chemistry (CY)
		Environmental Sciences (EVS)

Department wise Tentative Broad Areas of Research in which applications are invited:

Table I

Department	Broad Area of Research
Civil Engineering (CE)	Structural Engineering, Transportation Engineering, Geotechnical Engineering, Water Resources Engineering, Surveying/ Geomatics Engineering, GIS, Remote Sensing, Environmental Engineering
Computer Science and Engineering (CSE)	Wireless Sensor Networks, Network Theory, Data Analytics, Quantum Computing in Networks, Federated Learning, Machine Learning, Motion analysis, Computer Vision, Cloud Computing, Data Security, 5G, Artificial Intelligence, Data Science, Databases, Big Data Analytics, Data Science, Health Informatics.
Electrical Engineering (EE)	Power System Restructuring/ Deregulation, Electricity Market, Distributed Generation, Renewable Energy, Security Analysis, Fault Detection, Operation and Control of Power Systems, Smart Energy Network, Electric Vehicle, Power Electronics, Application of Power Electronics to Renewable Energy Systems, Smart DC Grids (Micro/Nano), Modeling, Design and Smart Grids, Modeling & Design of Converters, FPGA Design, Control Systems, Signal Processing, Control Systems, Biomedical Signal processing, Artificial Intelligence, Renewable Energy, Image Processing, Power Systems, Reliability Engineering, Power Systems Analysis, and Smart Grid, Failure Analysis, RAMS, Power Electronics and Electric Drives, Electrical Machines.

Electronics and Communication Engineering (ECE)	Communication Systems & Networks, Optical & Wireless Communication Systems, Group IV Photonics, Semiconductor Opto-electronic Devices, Electronic Circuits & Devices, Nano-electronics and Nano-photonics, VLSI Design, Embedded Systems, VLSI Architecture for Signal and Image Processing, Under Water Image Processing, Signal Processing (Image Processing, Speech Processing, Bio-Signal Processing), Artificial Intelligence and Machine Learning, Blockchain, Peer-to-Peer Networks, Neural Networks, Game theory, Standard cell characterization of basic logic cells, Delay modeling, Device Circuit Co- design, Design and analysis of Novel devices like TFET etc, Computer Vision, Robotics, Pattern Recognition, Artificial Intelligence, Data Science and Analysis, Analog and Mixed Signal IC Design, RF and Microwave Circuits and Devices, 3G, 4G and 5G Technology, Telecommunication Networks, IoT, Antenna Design, High Frequency Circuit Design, RF Energy Harvesting, Biosensors, Low Power VLSI Design,
Mechanical Engineering (ME)	Additive Manufacturing, Advanced Machining Processes, Measurement and Metrology, Metal Matrix Composites, Boiling and Condensation Heat Transfer, Refrigeration, Two Phase Flow, Fluid Flow, CFD, Solar Energy, Bio-fuels, Thermal Energy Storage (TES), Renewable Energy, Thermal Aspects of Additive Manufacturing, Thermal Engineering, Numerical Modeling and Simulation, Strength of Materials, Rupture of Ductile Materials.
Applied Sciences (AS) Discipline: Physics (PH)	Nanophotonic Sensors and Devices, Plasmonics 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
Applied Sciences (AS) Discipline: Mathematics (MA)	Convection in Fluids, Heat Transfer, Nanofluids, Ferrofluids, Micropolar Fluids, Non-Newtonian Fluids, Porous Media, Computational Applied Mathematics.
Applied Sciences (AS) Discipline: Chemistry (CY)	Design and synthesis of new porous materials with metal skeleton and their application in catalysis, chemical technology, and host-guest chemistry (molecular adsorption and molecular recognition), electrical, optical and magnetic properties, Inorganic, Organic Chemistry.
Applied Sciences and (AS) (M.Sc. candidates only) Discipline: Environmental Sciences (EVS)	Environmental Science and Engineering, Environmental Biotechnology, Waste Water Treatment, Waste to Energy Conversion

Minimum Eligibility/ Minimum Educational Qualifications and Student Category for Application:

<p>Educational Qualifications:</p> <ul style="list-style-type: none"> An applicant possessing the prescribed qualifications shall be eligible for admission to a Ph.D. program of the institute. Degrees obtained through distance education programs shall not be considered. The Course as well as University/Institute/Organization of qualifying degree must be recognized by AICTE/UGC or equivalent and will be verified by Academic Section before registration. The eligibility criteria for Ph.D. is as below: <p>Ph. D in Engineering:</p> <ul style="list-style-type: none"> Master's degree in respective discipline or equivalent with a minimum Cumulative Grade Point Average (CGPA) of 6.5 on a 10-point scale or equivalent as determined by the Institute wherever letter grades are awarded; or 60% marks in aggregate where marks are awarded. B. Tech degree and Dual Degree (B. Tech & M. Tech) holders having final CGPA ≥ 8.00 from Indian Institutes of Technology (IITs) or National Institute of Technology (NITs) with a valid GATE score will be eligible for admission in Ph.D. <p style="text-align: center;">OR</p> <p>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</p>

equivalent) in an engineering degree level technical Institute or R&D organization/industry, and Evidence of Master's level R&D work completed.

Ph. D in Sciences:

- **Minimum Requirement:** Master's Degree in appropriate branch of sciences with a minimum of 60% marks or equivalent CGPA at Master's and/or Bachelor's Levels.
- **Additional Requirement:** Candidate must have GATE score/CSIR/UGC/NBHM award/NBHM award/fellowship for full time Ph.D.

Part-time applicants will be eligible under following categories:

- Candidates from organizations which have MOU with NIT Delhi.
- Organizations with R & D labs of National Repute.
- Regular faculty/ Teaching cum Research Fellow or Scientists from Educational Institutions, R & D organizations, and Govt. Department/ Govt. Undertaking provided that the applicant possesses the minimum entry qualifications for the degree as given in R 3.1 (PhD ordinance 2021); 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 official duties permits him to devote sufficient time to research.
- 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 must fulfill the eligibility criteria as per R 3.1. (PhD ordinance 2021) No relaxation will be given in screening test.

Important Points:

- To qualify/ appear the PhD Entrance Examination is not mandatory for the candidates applying for PhD (Part-Time)/ PhD (Self financed)/ PhD (Sponsored) category.
- Minimum work experience of 2 years for PhD (Part-Time) is not mandatory.
- 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 (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.

Important Notes:

1. **Merely fulfilling above minimum eligibility criteria does not ensure the selection or even eligibility for the entrance test/ interview or both.**
2. **Regarding selection, the decision of the Competent Authority will be treated as final and binding**

Rules and Regulations:

All the applied/ selected candidates will be governed by the rules and regulations of the PhD Ordinance 2021-2022 of the Institute. Candidates are advised to read the ordinance clearly before proceeding for the application.

[NITD Website → Academics → Academic System → PhD Ordinance → PhD ordinance 2021-2022]

Procedure for Online Application/ How to Apply:

1.	Students have to fill up the online Google Form within stipulated time mentioned. Late submissions will not be entertained, under any circumstances.
2.	Link for the Online Form: https://forms.gle/E4tt1qxdgnWW3Vr2A
3.	During filling up the online Google Form, candidates are advised to read up all the requisite details very carefully, correctly and upload all the relevant documents along with application form (pages 6-7 of the advertisement) in pdf format .
4.	Candidates are advised to visit the institute website: www.nitdelhi.ac.in for frequent updates.
5.	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.
6.	Application Fee: (a) UR/ OBC-NCL/ EWS Candidates: Rs. 1000/- (b) SC/ ST/ PwD Candidates : Rs 500/- (c) Women Candidates (Indian only) are exempted from the application fee.

	(d) Foreign Nationals: USD 50
7.	The application fee can be paid online through the following link: https://pages.razorpay.com/pl_IctiRs9fDjAVVX/view
8.	Candidates should mention Transaction ID after paying the fee in appropriate section of the application form. Women candidates (Indian only) should mention "NA" in the column.
9.	Sponsored candidates should produce NOC/ Sponsorship Letter from his/her Institute at the time of Interview/ Document Verification.
10.	Incomplete, improper and wrong applications will not be considered for short-listing.

Admission Process:

1.	Applications for Ph.D. programs are invited from Indian and foreign nationals on the prescribed format (via online Google Form). Applications as received will be scrutinized at the departmental/ central level by inviting two DPGC nominees. After scrutiny, list of all eligible applicants will be uploaded on the institute website.
2.	All eligible applicants will have to appear in one objective type written tests of PG level as below: i. Paper: Area of Research/Specialization : 60 marks, 60 minutes duration Qualifying marks are 40 % of the total marks (60 marks) for UR/ EWS/ OBC-NCL and 35 % for SC/ ST/ PwD. Tests will be conducted at central/ respective department's level. Detailed guidelines for the conduct of tests (along with tests schedule) will be uploaded on Institute Website.
3.	List of the qualifying candidates in the written test will be uploaded by the office of Dean (Academics)/ respective department on the Institute website.
4.	All qualified candidates (in the written test) will be required to appear before the respective DPGC for an interview comprising of a brief presentation by the candidate related to research area. Qualified candidates (in written test) may contact prospective supervisors in the departments.
5.	DPGC will evaluate the candidates and marks will be awarded out of 40 marks (15 marks for presentation, 15 marks for interview and 10 marks for academic achievements). Qualifying marks for this are 40% (16 marks). DPGC will submit the score sheet to the Dean (Academics).
6.	Based upon their performance in written test and interaction/interview with DPGC in totality (out of 100 marks), respective DPGC will recommend to the Office of Dean Academics, the merit list of candidates by awarding marks out of 100, seat wise (as advertised) along with proposed allotted supervisor(s). Such allotment should take care of uniform distribution of full time research scholars (including candidates from other departments) among all eligible supervisors. Qualified scholars if working in the Govt./industry sponsored project/fellowship are to be supervised by the coordinating faculty/ principal investigator, provided he/she is eligible to become supervisor. In case of tie, merit list will be prepared on the basis of following (in order of preference): (i) Performance of candidate in written test (ii) Percentage of marks in qualifying degree (iii) Age of the candidate.
7.	After receiving the merit list as above, Dean (Academics) shall then consolidate the list of all the departments and notify the eligible applicants through appropriate means with the approval of competent authority.
8.	The provisionally selected candidates will be communicated through Email and the List will also be displayed over the Institute website.

Important Notes:

Regarding shortlisting and selection of the candidates, the decision of the departmental committees/ DPGC and subsequently of the Competent Authority will be treated as final and binding.

Reservations:

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, 2022 along with the application.

Teaching Assistantship-cum-Scholarships/ Fellowships:

- a. **The candidates who have qualified GATE/ NET of respective discipline/ Institute Entrance Exam for admission to PhD are eligible for Teaching Assistantship-cum-Scholarships/ Fellowships subjected to the availability.**
- b. Ph. D. (Full-Time) students will be awarded scholarship cum teaching assistantship as per the guidelines of Ministry of Education Govt. of India. The scholarship cum teaching assistantship are limited subject to availability of scholarship cum teaching assistantship, otherwise candidate may be considered for Full-Time without scholarship cum teaching assistantship.
- c. The selected candidates without scholarship cum teaching assistantship are required to submit undertaking on judicial stamp paper that they will not claim scholarship cum teaching assistantship from the Institute in future. However, they can submit research proposal to different funding agencies or they can apply to different outside funding agencies for scholarship.

Important Links for Prior Information:

New Ph. D Ordinance 2021-2022	NITD Website → Academics → Academic System → PhD ordinance → PhD ordinance (2021-2022 onwards)
Academic Calendar	NITD Website → Academics → Academic Calendar

List of Enclosures (Minimum) to be attached along with application form appropriately during Filling Up the Online Google Form:

1.	Transaction ID
2.	Passport size photograph
3.	Class X Examination Mark sheet/ Certificate (May be upload for Date of Birth proof also)
4.	Class XII Examination Mark sheet/ Certificate
5.	B.Sc./B. Tech/B.E. Examination certificate indicating the detail marks
6.	M.Sc./M. Tech/ M. Phil/ PG (as applicable) Examination certificate indicating the detail marks
7.	Certificate in support of claim under reserved category (OBC-NCL/ EWS/ SC/ ST/ PwD)
8.	GATE/JRF/ NET qualifying certificate
9.	Synopsis (1-2 pages, maximum) on proposed area of research.

**Registrar
NIT Delhi**



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Application Form for Admission to PhD Program for
Academic Year 2022-2023 (Spring Semester)

1. **Select program (Any one)**
Ensure your eligibility before selecting the program. If you wish to apply for more than 1 program, please apply separately.

Sl. No.	Department/ Discipline	Tick (✓) in the Department/ Discipline you wish to apply
1	Civil Engineering (CE)	
2	Computer Science and Engineering (CSE)	
3	Electrical Engineering (EE)	
4	Electronics and Communication Engineering (ECE)	
5	Mechanical Engineering (ME)	
6.1	Applied Sciences (Chemistry) (CH)	
6.2	Applied Sciences (Mathematics) (MT)	
6.3	Applied Sciences (Physics) (PH)	
6.4	Applied Sciences (Environmental Sciences) (EVS)	

2. **Select Category of Registration of PhD applied and Details of NET/ NET-JRF/ GATE**

Sl. No.	Category of PhD Registration Applied	Tick (✓) in the PhD Registration Applied you wish to apply	Whether NET/ NET-JRF/ GATE Qualified. If yes, mention Year, Score and Rank	<div>Paste a recent passport size photograph</div>
1	Full Time (Institute Fellowship)			
2	Full Time (Own Fellowship)			
3	Full Time (Self-Financed)			
4	Full Time (Sponsored)			
5	Part-Time			

3. **Name in Full (in BLOCK Letters)**.....
4. **Father's Name (in BLOCK Letters)**.....
5. **Mother's Name (in BLOCK Letters)**.....
6. **Date of Birth (DD/MM/YYYY format)**

7. Gender: Male/ Female/ Others

8. Address (in BLOCK Letters)

.....

Mobile No.....E-mail.....

Aadhar No.

9. Nationality..... Religion.....

10. Category (UR/ EWS/ OBC-NCL/ SC/ ST/ PwD)

11. Details of Examination Passed (from Class X onwards):

Sl. No.	Examination Passed (Fill the applicable only)	Subject/ Discipline/ Specialization	Year of Passing	CGPA/ Percentage of Marks Obtained	Division (I/ II/ III)	Name of the Institute & University	Whether Documentary Evidence attached (Yes/ No)
1	Secondary School Certificate (Class X)						
2	Higher Secondary School Certificate (Class XII)						
3	Diploma in Engineering/ BSc						
4	BE/ BTech/ MSc						
5	ME/ MTech/ MPhil						
6							
7							

12. Have you ever been disqualified or debarred from appearing in any examination conducted by a University/ Board? Yes /No

If yes, give details:

DECLARATION BY THE CANDIDATE

I clearly understand that my application to the PhD program to the National Institute of Technology Delhi is subjected to the applicable regulations from time to time. I also understand that the admission is being allowed to me on the basis of the certificates and documents produced by me. I also undertake that the certificates and documents produced by me in original are correct, genuine and true to the best of my knowledge. If any information/documents/particulars is found to be forged or false at any stage in future, then the NIT Delhi can cancel my admission and all the fees deposited by me shall be forfeited. If any degree will be awarded based on my admission on the basis on my forged documents then that certificate/degree awarded by NIT Delhi shall be automatically cancelled. In such case, I shall have no claim, whatsoever, in respect of my admission.

Date.....

Signature of the Applicant