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### Admission to PhD (Full-Time and Part-Time) Programme in Engineering, Sciences, Humanities and Management for the Academic Year 2024-2025 (Session July-December, 2024)

Applications are invited for admission to PhD (Full-Time and Part-Time) Programme in Engineering, Sciences, Humanities and Management for the Academic Year 2024-2025 (Session July-December, 2024). The Broad areas of Research, Eligibility Criteria, Selection Procedure, Reservation, Teaching Assistantship-cum-Scholarship, etc. are given in this advertisement.

**How to apply:** The link to fill the online application form can be accessed through Institute website www.nitj.ac.in. Please submit separate application forms, if applying for more than one programme. An application fee of Rs.1000/- (Rs.500/- for SC/ST/PWD candidates) is required to be paid online. The candidates are required to apply online and there is no requirement to send the Hard Copy of the application form to the Institute. Application fee shall not be refunded in any case.

**Last date for submission of online application form is 28/04/2024.**

For more details, the candidates are advised to visit the Institute website www.nitj.ac.in for updates.

**Dr B R AMBEDKAR NATIONAL INSTITUTE OF TECHNOLOGY, JALANDHAR – 144008**

Admission to PhD (Full-Time and Part-Time) Programme for the Academic Year 2024-2025
(Session July-December, 2024)

A) **Ph.D. (Full-Time, Admission under financial support from NIT Jalandhar and Part-Time without financial support):**

| Sr. No. | Department Email address of HOD | Broad Areas of Research |
|---|---|---|
| 01 | Biotechnology obt@nitj.ac.in | Bioprocess Engineering, Environmental Biotechnology, Nano Biotechnology, Enzyme Technology, Algal Biotechnology, Industrial Biotechnology, Biosynthesis of value-added chemicals, Bioenergy/Biofuels, Bioprocess and Bioreactor Design, Biohydrogen, Bioprocess Optimization, Bioremediation, Microbial and Environmental Biotechnology, Metabolites and Biorefinery, Bioplastics, Enzyme and Protein Engineering, Biomaterials, Tissue Engineering, Nano-Biotechnology, Waste Valorization, Computational Biology, Drug Delivery System, Aerogels/hydrogels, Environmental Engineering, Bioinformatics, Proteomics, Environmental Remediation, Biofilms, Wastewater treatment, Applied Microbiology |
| 02 | Chemical Engineering och@nitj.ac.in | Biomass to value added products, Catalysis, Kinetic modelling, Wastewater Treatment, Solid Waste Management, Nanomaterials, New and Renewable Energy, Functional coatings, Polymeric coatings, Renewable Energy, Modelling and Simulation, $CO_2$ Sequestration, Edible films and coatings, Green Energy, Waste to Wealth, Coatings for Energy and Environment, Waste to Energy, Photocatalysis, Self Cleaning Cement, Environmental Engineering, Process Safety, Fire Retardant Materials, Hydrogels for Waste Water Treatment, Smart Materials, Nanomaterials and Nanocomposites, Polymeric films, Green Hydrogen, Renewable Energy, Environmental Remediation, Building Materials, Textiles effluent Treatment, Water Treatment, Lignocellulosic Biomass Valorization, Computational fluid dynamics (CFD), Non-Newtonian Fluids, Porous media flow, Nanofluids, Bio-inspired adhesives, Microfluidics devices, Colloidal Suspension, Rheology of Complex Fluids, complex systems modeling, Biodegradable polymers and composites |
| 03 | Civil Engineering oce@nitj.ac.in | Structural Engineering, Concrete Technology, Geotechnical Engineering, Transportation Engineering, Environmental Engineering, Water Resource Engineering, Construction Engineering and Management |
| 04 | Computer Science & Engineering ocs@nitj.ac.in | Probabilistic Data Structures, Data analytics, Machine learning and Algorithms, Mobile Adhoc and Opportunistic Network, AI, Data Science, Forecasting, Mobile edge networks, vehicular networks, wireless networks and edge computing, Cloud Computing Software Engineering, Computer Vision, Digital Image Processing, Information security. Wireless networks, Natural Language Processing, Real time Scheduling Theory, Safety- critical System Design, Mixed- criticality Systems, Cyber Warfare, Computer Vision, Biometric Security, Computer networks, real |

| | | time system, multimedia communication, flying adhoc network, network security, Wireless Sensor Network Internet of Things, Information Security, Application security, Ransomware, Explainable AI, Adversarial ML |
|---|---|---|
| 05 | Electrical Engineering<br><br>oee@nitj.ac.in | AI Applications in Smart Grids & Electricity Markets, Energy Storage System, AI-Enabled Toolkits for Multi-Energy Systems, Power System Planning, High Voltage Engineering, Condition Monitoring of Transformers, Acoustic Emission Partial Discharge, Life Time Estimation of Cables, Harmonic Effect On Tree Growth of Cables, Generative AI for T-F Images, Uncertainty Quantification, Smart Microgrids, (DC/AC/Hybrid), Renewable Energy Sources, Applications of Power Electronics in Power Systems, Distributed Generations, PWM Based Voltage Source Converters, Power Electronics, Motor Control, Multilevel Inverters, DC-DC Converters Design, Fronted Converter, Motor Design, Power Electronics and Drives, Electric Vehicles, Battery Management System. |
| 06 | Electronics & Communication Engineering<br><br>oec@nitj.ac.in | Electromagnetic Applications in Biomedical, 5G Communication, RF/Wireless Communications, Human-computer interactions, RF Circuits Design, Biomedical Signal/ Image processing, Signal/ Image Processing, Telemedicine, Healthcare, Digital Signal Processing and Its Applications, VLSI Circuit Design, Nanoscale Devices and Nano electronics, Analog and Digital Design, Low Power VLSI Design, Machine learning, Intelligent Networks Wireless & Adhoc N/W Signal Processing, Antenna Engineering- EBG based antenna, Beamforming Antenna, Aperture Antenna, Conformal Antenna, RF and Microwave components and systems- Filters, couplers, circulator, Communication Network, Machine to Machine Communications, Layer protocols for IoT, MAC Protocols. Assistive Technologies, AI for Healthcare |
| 07 | Information Technology<br><br>oit@nitj.ac.in | Explainable AI, Generative AI, Edge computing, Federated learning, Wireless Sensor Network, Bio-Inspired Computing, Data Science, Bioinformatics, AI, Cloud Computing, IoT, Machine Learning, Network Analysis, BlockChain, Optimization, Natural Language Processing, Data Analytics, Body Network, Security. |
| 08 | Instrumentation & Control Engineering<br><br>oic@nitj.ac.in | Biomedical Instrumentation & Signal Processing, Power System Operation and Control, Microgrids, Renewable Energy, Applications of Soft Computing, Artificial intelligence, deep learning, Data science, machine learning , brain computer interface, Robotics and AI, Automation, Mobile Robot Perception and Navigation, Machine/Deep/Quantum Learning for Computer Vision, Unmanned System Technology and Navigation, Applied Soft Computing & Optimization Techniques, Nonlinear process design, integration, control and optimization, biomedical instrumentation and Machine Learning, computational and experimental approaches for rehabilitation, Control System, Electric Vehicle and Micro-grid, Biomedical, Robotics, AI methods, Control System Design, Applications of Optimization techniques, Artificial intelligence based Process Control, Renewable Energy Applications, Applications of machine learning in healthcare, Biomedical Engineering, Machine learning, Measurement and Instrumentation for space applications, Biophotonics, Laser based |

| | | instrumentation, Photoacoustic sensing technology, Laser generated focused ultrasound, Biosensor, Bio signal processing, AI- assisted sensing and therapeutic techniques, Robust and Resilient Control, Cyber Physical System & Control, Modern Power System Operation, control and stability, Electric Vehicles, Biomedical Instrumentation & Signal Processing, Power System Operation and Control, Microgrids, Renewable Energy, Applications of Soft Computing, deep learning, Data science, brain computer interface, Automation, Mobile Robot Perception and Navigation, Machine/Deep/Quantum Learning for Computer Vision, Unmanned System Technology and Navigation, Applied Soft Computing & Optimization Techniques, Nonlinear process design, integration, control and optimization, biomedical instrumentation and Machine Learning, computational and experimental approaches for rehabilitation, Ayurveda, Control System Engineering, model order reduction, two wheeled mobile robot, renewable energy, Digital image processing Computer/ machine vision with deep learning/machine learning (DL/M), WSN/BAN/ VANET/IoT, Smart sensors design and modelling, Intelligent sensor systems, Intelligent Virtual instrumentation for measurement and control, smart agriculture, smart health care, Model Order Reduction. |
|---|---|---|
| 09 | Industrial & Production Engineering oie@nitj.ac.in | Operations and Supply Chain Management, Ergonomics & Human Factors Engineering, Occupational Health and Safety, Non-Conventional, Energy (Solar) And Sustainability, Additive Manufacturing. Super hydrophobic Surfaces, Thermal Spray Coatings, Surface Coating, Tribiology Optimization Of Manufacturing Systems, Operations And Industrial Management, Sustainable Manufacturing, Machining, Optimizing Techniques, Agriculture Machining, Life Cycle Assessment, Performance Optimization Of Manufacturing Systems (CMS, FMS, RMS), Internet Of Things (IoT), Numerical and Experimental Investigation of Additively Manufactured Super alloys, Modeling of Manufacturing Processes, Data Analytics, Industry 4.0, Advanced Manufacturing, Magnetic abrasive finishing, Advanced manufacturing processes, Mechanical behavior of materials, Welding Engineering, Nano-finishing, Additive Manufacturing, Bio Material, Reliability and Maintenance Engineering, Solid Mechanics, Experimental & analytical fracture mechanics, fatigue crack growth |
| 10 | Mechanical Engineering ome@nitj.ac.in | Robotics, Mechatronics, System Dynamics & Control, Modeling and Simulation of Physical Systems, Biomechanics, Bond Graph, Combustion and Fluid flow and Heat transfer, Combustion and Fluid flow and Heat transfer, Welding Technology, Alternate Propulsion system and technologies, Appropriate Engineering solutions, Startups, Fatigue of composites, Creep of materials, Heat Exchangers, Condensation and Boiling, Solar Thermal Polygeneration and Solar Tracking, Alternative Fuels for Combustion Engines, IC engine Emission Control, Engine Combustion Investigations, Fuel Efficient Engines, Low Temperature combustion, Fluid Flow and Heat Transfer, Vibration Engineering, Microwave Processing of materials, FEM, Thermal and Fluid Sciences, Composite materials, Solar Thermal Technology, Design and Manufacturing, CFD and Heat Transfer, PCM, Solar Energy, Microchannel, Technology for rural development, Flow Fluid and Tribology, Thermal Engineering, Energy Efficiency, Tribology of Composite Materials, Advance Manufacturing sheet metal forming |

| | | additive manufacturing, Battery thermal management system, Thermal management of electronics devices, Microfluidics and Nanofluidics |
|---|---|---|
| 11 | Textile Technology<br><br>otx@nitj.ac.in | Technical Textile, Mechanical Processing of Textiles, Structure and Properties of Textiles, Geotextile, Nonwovens Sewing Thread, apparel manufacturing and its comforts, yarn manufacturing and characterization, Fabric structure and property, relationship, Textile wet processing Functional textiles Sustainable Textile wet processing, Bioprocessing in textiles, Yarn Manufacturing, Textile waste recycling, Protective Textile, Bullet and stab resistance jacket, High performance fibre and fibre reinforced composite, Fibres, Polymers, and Textile Chemistry: Biopolymers, Polymer Synthesis, Porous Polymers, Emulsion Templating, Electrospinning, Polymer Composite, Textile Chemical Processing |
| 12 | Humanities & Management<br><br>ohm@nitj.ac.in | **AREAS OF SPECIALIZATION IN HUMANITIES:**<br><br>English Language and Literature, Gender Studies, Cultural Studies, Feminism, Transgender, Queer, Men Studies, Diaspora, Postcolonial Theory and Comparative Literature, Media Studies, ELT, Professional Communication, Linguistics.<br><br>**AREAS OF SPECIALIZATION IN MANAGEMENT:**<br><br>General Management, Financial Management, Human Resource Management, Marketing Management and Entrepreneurship Development and Management. Green Marketing, sustainable purchase behaviour, Brand Management, Services Marketing, Rural Marketing and Retail Marketing. ESG and performance measurement, Behavioural Finance, Sustainable Finance/Climate/Green Finance and Accounting, Climate Finance, Financial Economics, Stock Markets, Financial Analytics, Intersection of Economics, trade, and/ or finance, Fintech, Corporate Governance, Financial Distress Prediction, Bankruptcy Prediction, Crowdfunding, Corporate Finance and emerging finance areas. |
| 13 | Physics<br>oph@nitj.ac.in | Laser Plasma Interactions, Theoretical Nuclear Physics, Radiation Physics, Experimental Nuclear Physics, Theoretical High Energy Physics, Soft Condensed Matter Physics- Experimental (Liquid Crystals), Condensed Matter Physics (Experimental), Theoretical Condensed Matter Physics, High Energy Physics, Experimental Condensed Matter Physics, Quantum Thermodynamics, Nanomaterials and Nanotechnology |
| 14 | Chemistry<br><br>ocy@nitj.ac.in | Smart materials and nanotechnology, Nano- and environment-friendly functional smart materials, Materials chemistry/Surface Chemistry, Smart Polymers, Organic Synthesis, Synthetic organic chemistry, advanced materials for sensing, and hydrogen production; Synthesis, Crystallographic and computational studies of some coordination complexes and advanced materials and their applications in sensing and catalysis; Green nanomaterials fabrication, Wastewater treatment by advanced nanomaterials, Multifunctional Porous Materials (Metal-Organic Frameworks and Covalent Organic Frameworks) for Energy, Environment and Catalysis applications, Nanomaterials for Chemo- and |

| | | |
|---|---|---|
| | | Biosensing and Catalysis, Inorganic Chemistry (Catalytic applications of metal complexes), Supramolecular chemistry (Optical Chemo-sensing Applications), Supramolecular Chemistry, Hybrid nanomaterials for sensing and catalytic applications, Heterocycles, Fluoroorganic Chemistry, Drug delivery, Ionic Liquid, Oil-water separation, smart wettability surfaces, Hybrid nanocomposite materials for catalytic applications |
| 15 | Mathematics and Computing<br><br>oma@nitj.ac.in | Matrix Analysis, Statistics and Data Science, Optimization Techniques, Evolutionary Algorithms, Fluid Dynamics, Partial Differential Equations, Hyperbolic conservation laws, Fuzzy optimization, Numerical Analysis, Inequalities, Real Analysis, Fractal Geometry, Fractal Functions, Fixed Point Theory and Application, Computer Aided Geometric Design, Numerical Solution of PDEs using neural networks, Deep learning for time series forecasting |
| 16 | Centre for Energy and Environment<br><br>ocee@nitj.ac.in | Nanotechnology, Green Hydrogen, Environmental Engineering, Waste to Energy, Bioenergy and Biofuels, Solar Energy. Green Hydrogen, New and Renewable Energy, waste-to-green hydrogen production, Harvesting hydrogen from biomass, Photo-Nano-catalysis, Wind energy, Advanced Oxidation Processes, Photo-Nano-catalysis, WasteWater Treatment, Solid Waste Management, Microgrid Operation and Control, Robust Control, Cyber-physical Systems, Machine Learning, Hybrid Electric Vehicle, Hydropower system, Energy Management, Energy Efficient Solutions with emerging technologies: Wireless sensor networks, IoT, Blockchain Technology, AI/ML, Machine learning applications in condition monitoring of cables and power transformers |

**B) Eligibility Criteria**

**1) Ph.D. Full-Time (under Institute Fellowship with Teaching Assistantship-cum-Scholarships)**

**1.1 Engineering Departments (Sr. No. 1 to 11 & 16): Engineering Departments: General (For all Departments):** Master's Degree in Engineering/Technology in the relevant area of research along with a Bachelor's Degree in appropriate branch of Engineering/Technology with a first-class or minimum 60% marks (or CGPA of 6.5 on 10 point scale) in the qualifying examination.

For all Engineering Departments, for getting institute-level Teaching Assistantship-cum-Scholarships, the candidates with a Master's degree in Engineering must have qualified GATE exam as a mandatory requirement. However, the candidates with Master's degree in Engineering without GATE/NET can join in Ph.D. (Part-Time) programme.

For all Engineering Departments (Sr. No. 1 to 11 & 16), direct Ph.D. admission is also available in case of candidates with B Tech/B.E./BS (4 year) with a CGPA of 8.5 and above on a 10-point scale or 80% aggregate from a Centrally Funded Technical Institute (CFTI). All such candidates must be GATE-qualified. The number of credit courses to be cleared will be 24 credits before the comprehensive examination.

**1.1.1: Engineering Department Specific Qualifications:**

(i) **Department of Biotechnology:**

    (a) The Candidate should be B.E./B.Tech and/or M.E./M.Tech in the relevant branches of Engineering/Technology out of which either B.E./B.Tech. or M.E./M.Tech should be in Biotechnology/ Environmental Biotechnology/ Biochemical engineering/ Bioengineering/ Bioinformatics/ Environmental engineering/ Chemical Engineering/ Biomedical engineering/ Biological science and Bioengineering/ Computational biology.

    (b) Apart from above qualification, the Candidate with M.Sc./MS/M.Pharma in Biotechnology/Industrial Biotechnology/Environment Biotechnology/Biochemical Engineering/ Biochemical Technology/ Environmental Engineering/ Biomedical Technology/Biochemistry/Microbiology/Bioinformatics/ Pharmacy and in allied areas of Biotechnology with GATE/NET/GPAT in Biotechnology/Life sciences/Pharmacy are also eligible.

    (c) The candidates with GATE/CSIR-UGC NET/GPAT do not require to clear Institute written examination for shortlisting towards "presentation and interaction" session. The admission to the Ph.D. programme shall be solely based upon performance of the individual candidates during "presentation and interaction" and availability of the Supervisor in the proposed area of research.

    (d) The M.E./M.Tech/M.Pharma candidates without GATE/NET/GPAT need to clear Institute written examination for shortlisting towards "presentation and interaction" session. Once selected based on the "presentation and interaction" session, they can join in Ph.D. (full time) programme with stipend.

    (e) The M.Sc/ MS/M.Pharma candidates without GATE/CSIR-UGC NET/GPAT need to clear Institute written examination for shortlisting towards "presentation and interaction" session. Once selected based on the "presentation and interaction" session, they can join in Ph.D. (part time) programme.

(ii) **Department of Chemical Engineering:**

**Full Time (with Institute fellowship)\***
M.Tech. in Engineering/Technology along with Bachelor's Degree in Engineering/Technology
Or
B.Tech. in Engineering/Technology with CGPA of 8.5 and above on a 10-point scale or 80% aggregate from Centrally Funded Technical Institute (CFTI)
Or
M.Sc. in Sciences with JRF-NET/GATE Score
Or
M.Pharm with GATE/GPAT Score.

**Part time\***
M.Tech. in Engineering/Technology along with Bachelor's Degree in Engineering/Technology
Or
B.Tech. in Engineering/Technology with CGPA of 8.5 and above on a 10-point scale or 80% aggregate from Centrally Funded Technical Institute (CFTI)
Or
M.Tech in Engineering/Technology
Or
MSc in Sciences

Or
M.Pharm

**Self Sponsored\***
M.Tech. in Engineering/Technology along with Bachelor's Degree in Engineering/Technology
Or
B.Tech. in Engineering/Technology with CGPA of 8.5 and above on a 10-point scale or 80% aggregate from Centrally Funded Technical Institute (CFTI)
Or
MSc in Sciences
Or
M.Pharm

\*Other terms and conditions are as per the Institute norms.

(iii) **Department of Instrumentation and Control Engineering:** The candidate should have Master's degree in Science in related fields but more preference will be given to Master's Degree in Science with Engineering (Ex. M.Sc. Engg.). Interdisciplinary department candidates will also be allowed (Ex. CSE, Mechanical Engg./Chemical Engg. Etc.).

(iv) **Department of Textile Technology:** The qualification for admission to Ph.D. programme is M. Tech. in any discipline whereas B.Tech should be in Textile Technology/Engineering.

(v) **Centre for Energy and Environment:** The Candidate should be B.E./B.Tech and/or M.E./M.Tech in any branch of Engineering/Technology with GATE/NET with a first class or minimum 60% marks (or CGPA of 6.5 on 10 point scale) in the qualifying examination.
Or
Candidates with M.Sc./ MS/ M.Pharma with GATE/NET/GPAT are also eligible with a first class or minimum 60% marks (or CGPA of 6.5 on 10 point scale) in the qualifying examination.

(vi) **Department of Industrial and Production Engineering:** Candidates with M.Tech. in any discipline and MBA in Operations, Supply Chain Management, Information Technology and Business Analytics will be considered eligible for admission in Ph.D. Programme in the department, provided they are willing to undertake research in relevant areas of expertise available in the Department.

(vii) **Department of Information Technology:** (i) Master's degree in Engineering/Technology in the relevant area of research with minimum CGPA of 6.5 on a 10-point scale or equivalent in the qualifying examination. The candidates having B. Tech degree in other than CSE/IT must be GATE qualified in CS/IT/Data Science and Artificial Intelligence discipline or must be NET qualified.

(ii) Bachelor's degree in Engineering/Technology from a Centrally Funding Technical Institutes (CFTI) with minimum CGPA of 8.5 or above on a 10-point scale or equivalent in the qualifying examination. In such cases, the candidates have to fulfil the requirement of minimum of 24 credits of course work.

(iii) MCA with M.Tech. (relevant branch) having minimum CGPA of 6.5 on a 10-point scale having GATE qualified in CS/IT/Data Science and Artificial Intelligence discipline or NET qualified.
**OR**

(iv) The candidates should have valid JRF(UGC/CSIR) or valid GATE score (CS/IT) and satisfy any one of the following criteria:

a) M.Sc. (CS/IT) with M. Tech (relevant branch) research with minimum CGPA of 6.5 on a 10-point scale or equivalent in the qualifying examination.

b) M.C.A. from CFTI/Top 100 NIRF Institutes in last 2 years with minimum CGPA of 8.5 or above on a 10-point scale or equivalent in the qualifying examination. In such cases, the candidates have to fulfil the requirement of minimum of 24 credits of course work.

**1.2: Mathematics and Computing & Science Departments (Physics, Chemistry):** 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. For getting institute-level Teaching Assistantship-cum-Scholarships, candidates with a Master's degree in science/mathematics/statistics must have valid and qualifying GATE score or valid CSIR-NET(LS/JRF)/INSPIRE/NBHM-Ph.D. qualification, etc

**1.3: Humanities & Management:**

➢ **Humanities:**

- **Ph.D. (English Literature):** Master's degree in English or English Language Teaching with at least 55% marks or a CGPA of 6.0 on 10 pointscale.

- **Ph.D. (Linguistics):** Master's degree in Linguistics or English or English Language Teaching with at least 55% marks or a CGPA of 6.0 on 10 pointscale.

➢ **Management:**

- **Ph.D. (Management):** Master's degree in Management or Commerce with at least 60% marks or a CGPA of 6.5 on 10 point scale.

The candidates in Humanities and Management must be NET/GATE qualified and must have a valid score for the award of stipend-cum- teaching assistantship as per Ministry of HRD norms and Institute norms.

> *Note 1: Only primary mode of evaluation (CGPA or percentage) as mentioned in the qualifying degree certificate/mark sheet will be considered while verifying eligibility. Conversion from CGPA to percentage or vice versa given by individual Institute/University will not be allowed*
> *Note 2: For the SC / ST / PwD applicants, the eligibility requirement of marks be relaxed by 5%, or by a CGPA of 0.5 (on a 10 point scale) at both the Bachelor's and Master's level.*
> *Note 3: Candidates with GATE/NET (JRF/LS)/ UGC (JRF/LS) /GPAT/ Inspire Fellow / Sponsored by some outside agency as a full-time candidate need not clear Institute written examination. For all other candidate(s), Institute written examination is to be cleared. However, GATE/NET (JRF/LS)/ UGC (JRF/LS) /GPAT/ Inspire Fellow/ Sponsorship from outside agency or Institute Examinations are only for shortlisting of the applicants. Mere shortlisting of an applicant does not confirm admission to Ph.D. Programme. The admission*

> *shall be solely based upon the performance of individuals during "presentation and interaction" and availability of the Supervisor in the proposed area of research.*

**2) Ph.D. FULL-TIME SPONSORED**

(i) A candidate in this category is sponsored by a recognized R&D organization, academic institution, government organization or industry for doing research in the Institute on a full-time basis. The Institute does not provide any fellowship to such a candidate.

(ii) The candidate under this category must be a regular employee of his/her organization with at least one year of experience at the time of applying and be engaged in professional work in the discipline in which admission is sought.

(iii) The candidate should submit Sponsorship Letter from the employer along with the application. The application without Sponsorship Letter will NOT be considered.

(iv) The final admission to the candidates under this category is based on the performance in the written test and/or interview conducted by the concerned academic department/center, academic credentials of the candidates, etc.

(v) These candidates, if selected, will not be provided any fellowship/contingency grant by the Institute.

**3) Ph.D. FULL-TIME SELF-SPONSORED**

(i) The candidates under PhD Full-Time Self-Sponsored programme will be admitted without financial assistantship from NIT Jalandhar.

(ii) The students under this category must be able to attend classes regularly as per the schedule of the Institute during the course work and do research work by reporting every day to the supervisor/department.

(iii) The final admission to the candidates under this category is based on the performance in the written test and/or interview conducted by the concerned academic department/center, academic credentials of the candidates, etc.

(iv) These candidates, if selected, will not be provided any fellowship/contingency grant by the Institute.

**4) Ph.D. programmes (PART-TIME EMPLOYED/EXTERNAL)**:

A RS in this category is a professionally employed person (including the staff of NIT Jalandhar), who pursues the PhD Programme while continuing the duties of his/her service. The Institute does not provide any assistantship/fellowship to such a RS. Such candidates have to submit a "No Objection Certificate" from their employer, failing which their candidature will not be considered.

(i) The candidates under PhD Part-Time Employed/External programme are professionally employed persons (including regular employees of NIT Jalandhar) or sponsored by a recognized R&D organization, academic institution, government organization or industry with adequate Research Facilities for doing PhD at NIT

Jalandhar. These candidates should be able to complete their course work as per the Institute norms.

(ii)     The candidate under this category must be a regular employee of his/her organization with at least one year's of experience at the time of applying and be engaged in professional work in the discipline in which admission is sought.

(iii)    The PhD student under external category may be carry out the PhD Thesis Research Work mainly at his/her parent organization under a Local Supervisor but with the overall guidance provided by a faculty member (NITJ Main Supervisor).

(iv)    The candidate under this category must be a regular employee of his/her organization with at least 1-year of experience at the time of applying and be engaged in professional work in the discipline in which admission is sought.

(v)     They should submit No Objection Certificate from the employer along with the application. The application without No Objection Certificate will NOT be considered.

(vi)    The final admission to the candidates under this category is based on the performance in the written test and/or interview conducted by the concerned academic department/center, academic credentials of the candidates, etc.

(vii)   The Institute does NOT give any fellowship to the students under this category.

(viii)  These candidates, if selected, will not be provided any fellowship/contingency grant by the Institute.

For a foreign national candidate who applies through Ministry of Human Resource Development, Govt. of India, or Indian Council of Cultural Relations, Govt. of India, are eligible to apply provided that they possess the same minimum qualifications as required for Ph.D. admission in case of Regular candidates.

**5)     Ph.D. (Full-Time) with external fellowships like JRF/DST INSPIRE etc.**

The candidate who has already secured funding/fellowship from reputed external agencies like JRF/DST INSPIRE etc. can also apply for admission to Ph.D. (Full-Time) programme. These candidates, if selected, will not be provided any fellowship/contingency grant by the Institute.

**6)     Ph.D. (PART-TIME PROJECT STAFF) for candidates/staff working under the Research Projects sponsored by MHRD/DST/UGC or some other government agency at NIT, Jalandhar/any other institute**

Candidates/staff working under the Research Projects sponsored by MHRD/DST/UGC or some other government agency at NIT, Jalandhar/any other institute may pursue PhD under Part Time Category subject to the fulfilment of the following eligibility conditions:

(i)     The candidates under Project Staff and Part Time Category are presently working on sponsored R&D projects at NIT Jalandhar/any other Institute.

(ii)    They pursue PhD programme at the Institute on part time basis.

(iii)    The remaining duration of the project at the time of admission should be at least one year. If the project gets completed before the student completes his/her PhD Programme, then his/her category will be converted to that of SELF-FINANCED unless he/she is absorbed in some other R&D Projects or he/she is granted an fellowship from any other agency.

(iv) They are not entitled to receive Fellowship from the Institute.

(v) They should submit No Objection Certificate from the Dean-R&C, NIT Jalandhar/concerned PI of that Institute along with the application. The application without No Objection Certificate will NOT be considered.

(vi) The final admission to the candidates under this category is based on the performance in the written test and/or interview conducted by the concerned academic department/ center, academic credentials of the candidates, etc.

(vii) These candidates, if selected, will not be provided any fellowship/contingency grant by the Institute.

**The academic qualifications for the programmes mentioned at Sr. No. 2, 3, 4,5, & 6 will be same as that for Ph.D. (Full-Time) as mentioned at Sr. No. B (1).**

### C) Seat Matrix:

The number of seats depends upon the number of available research guides in the Institute, vacancies available with the guide and research infrastructure in the concerned Department. The admission of candidates to Ph.D. programme depends on the expertise available in a department and the willingness of the candidate to work in the corresponding research areas. The following table shows the tentative number of seats available in various Departments for admission during July-December, 2024 session, however, it is not obligatory for the Institute or concerned Department to fill all the seats mentioned in this matrix. The number of seats may increase/decrease as per the vacancies available at the time of admission.

| S. No. | Name of Department | Full Time with Institute Scholarship | | | | | | DST/JRF/ Inspire Fellowship | Part Time at NITJ | Part Time under Projects at NITJ | Total Nos. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | UR | EWS | SC | ST | OBC | | | | |
| 1. | Biotechnology | 9 | 4 | 1 | 1 | 1 | 2 | 09 | 07 | 07 | 32 |
| 2. | Civil Engineering | 15 | 6 | 1 | 3 | 1 | 4 | 01 | 11 | - | 27 |
| 3. | Chemical Engineering | 16 | 6 | 1 | 3 | 1 | 5 | 10 | 25 | 13 | 64 |
| 4. | Computer Science & Engineering | 20 | 8 | 2 | 3 | 1 | 6 | 14 | 17 | - | 51 |
| 5. | Electronics & Communication Engg | 21 | 8 | 2 | 3 | 2 | 6 | 15 | 31 | 06 | 73 |
| 6. | Instrumentation & Control Engineering | 16 | 6 | 2 | 2 | 1 | 5 | - | 17 | 04 | 37 |
| 7. | Industrial & Production Engg | 15 | 6 | 1 | 3 | 1 | 4 | - | 08 | 01 | 24 |
| 8. | Mechanical Engg | 22 | 9 | 2 | 4 | 1 | 6 | 03 | 12 | 05 | 42 |
| 9. | Textile Technology | 9 | 4 | 1 | 1 | 1 | 2 | 02 | 09 | 02 | 22 |
| 10. | Physics | 9 | 4 | 1 | 1 | 1 | 2 | 10 | 02 | 03 | 24 |
| 11. | Chemistry | 8 | 3 | 1 | 1 | 1 | 2 | 08 | 02 | 03 | 21 |
| 12. | Mathematics and Computing | 9 | 4 | 1 | 1 | 1 | 2 | 16 | 01 | - | 26 |
| 13. | Humanities & Management | 7 | 3 | 1 | 1 | 0 | 2 | 13 | - | - | 20 |
| 14. | Centre for Energy & Environment | 9 | 4 | 1 | 1 | 1 | 2 | 03 | 17 | 02 | 31 |
| 15. | Information Technology | 9 | 4 | 1 | 1 | 1 | 2 | 09 | 17 | - | 35 |
| 16. | Electrical Engineering | 7 | 3 | 1 | 1 | 0 | 2 | - | 08 | - | 15 |
| | **TOTAL** | **201** | **82** | **20** | **30** | **15** | **54** | **113** | **184** | **46** | **544** |

*Reservation of the Ph.D. (Full-Time) Institute Fellowship Seats shall be as per Government of India norms and number of seats available in the respective Department. Horizontal Reservation of 5% to PwD candidates in each category (UR, EWS, SC, ST, OBC) shall be applicable.*

Candidates are advised to apply accordingly. No request for admission to a reserved category seat which is 'NIL' as per this advertisement shall be considered.

**D)    Admission Procedure**

i.    Candidates with GATE/NET (JRF/LS)/ UGC (JRF/LS) /GPAT/ Inspire Fellow / Sponsored by some outside agency as a full-time candidate need not clear Institute written examination. For all other candidate Institute written examination is to be cleared. However, GATE/NET (JRF/LS)/ UGC (JRF/LS) /GPAT/ Inspire Fellow/ Sponsorship from outside agency or Institute Examinations are only for shortlisting of the applicants.  Mere shortlisting of an applicant does not confirm admission to Ph.D. Programme. The admission shall be solely based upon the performance of individuals during "presentation and interaction" and availability of the Supervisor in the proposed area of research.

ii.    The admission to Ph.D. programme (Full-Time/Part-Time) in all disciplines mentioned in this advertisement shall be made purely on the basis of a "presentation" to be made by the shortlisted applicants in their proposed area of research followed by "interaction" to be conducted by the respective Department Admission Committee.  Mere shortlisting of an applicant does not confirm admission to Ph.D. Programme.

iii.    Shortlisting of candidates (other than GATE/NET (JRF/LS)/ UGC (JRF/LS)/GPAT/ Inspire Fellow / Sponsored by some outside agency as a full-time candidate) shall be done by Departmental Admission Committee for the process of "presentation and interaction" for the applicants. For this purpose, a screening test shall be conducted by the respective Departments. Only those applicants who score marks above the cutoff of 40%, i.e. 24 marks out of 60 for UR category candidates, and 35% i.e. 21 out of 60 for SC/ST/OBC/EWS/PWD candidates in the screening test shall be eligible for presentation and interaction process. Marks obtained in the screening test shall not be counted for preparation of final merit list of the successful candidates.

iv.    The Pattern of Examination shall be as of GATE and NET examination. The Screening Test will be of MCQ Mode.

v.    The Department Admission Committee for each Department shall recommend the suitable candidates for admission based on its assessment of presentation and interaction. Marks obtained in the screening test shall not be counted for preparation of final merit list of the successful candidates.

vi.    Merely shortlisting of an applicant does not confirm admission to Ph.D. programme. The admission shall be solely based upon performance of individuals during "presentation and interaction" and availability of the Supervisor in the proposed area of research. The Department Admission Committee/Institute reserves the right not to recommend any candidate for admission to Ph.D. in the respective Department if the performance of the shortlisted candidates is not found satisfactory during "presentation and interaction". The decision of Department Admission Committee (approved by the competent authority of the Institute) shall be final.

vii.    The merit list of the selected candidates (based on presentation & interaction) shall be prepared on marks basis. A candidate who scores less than 40 marks (out of 100) for "presentation & interaction" shall not be considered "qualified" for admission to Ph.D. programme and his/her

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name shall not be recommended for admission by Departmental Admission Committee. The list of recommended candidates for admission to Ph.D. (Full-Time) programme shall be made in order of merit.

**E)    Other Issues**

i.    An applicant is required to apply on different application forms in case he/she wants his/her candidature to be considered in more than one Department.

ii.    Category (UR/EWS/OBC/SC/ST/PWD) once chosen by the applicant in his/her application form shall not be changed at a later stage. Candidate(s) claiming any reservation category (EWS/OBC/SC/ST/PWD) and also UR category should apply on separate application forms for the purpose.

iii.    OBC-NCL/EWS Certificate must have been issued on or after **1st April, 2023** so that the candidates from creamy layer are identified. No certificate issued before this date shall be acceptable.

iv.    All the candidates should ensure that they possess the required educational qualification by the last date of submission of the application under this Advertisement.

v.    **Certificate Checking:** The certificates (in original) of all the candidates recommended for admission shall be checked by the individual Department before deposition of fee by the candidates.

vi.    The candidate (in service) applying for full-time Ph.D. programmes need to apply through proper channel. Any application without "No Objection Certificate" from the employer shall not be considered for shortlisting.

vii.    The application without proof of application fee as applicable/self-attested copies of documents/certificates/testimonials shall be rejected and shall not be considered for shortlisting.

**F)    Reservation**

The reservation rules will be followed as per Government of India guidelines prevailing at the time of admission.

**G)    Teaching Assistantship-cum-Scholarships**

Eligible candidates for stipend cum teaching assistantship shall be paid as per instructions issued by Ministry of Human Resource Development (MHRD) from time to time.

(i) For all Engineering Departments, for getting institute-level Teaching Assistantship-cum-Scholarships for the candidates with a Master's degree in Engineering GATE is mandatory. Candidates with a Master's degree in science must have qualified and must have a valid GATE/NET for the scholarship. For all other Programmes, GATE/NET shall be compulsory for Institute Scholarship. Candidates admitted under Full-Time (Institute Fellowship/JRF/any other external Fellowship) will be allotted certain teaching load as prescribed by the Institute from time to time.

(ii) No Teaching Assistantship-cum-Scholarships /Scholarship/Fellowship and Contingency grant shall be given to the candidates admitted as under Part-Time Ph.D. programme. However, Stipend-cum-Teaching Assistantship/Scholarship/Fellowship 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.

(iii) In case, the provisional admission is done under some project grant/financial support from other funding agencies, the relevant rules of the funding agency shall be implemented for the disbursement of stipend/scholarship. No financial assistance shall be given by the Institute in such cases. All other criteria of admission to Ph.D. programmes shall remain same for such candidates.

(iv) Stipend-cum-teaching assistantship for Research Scholars admitted to the appropriate discipline under Institute support shall be started from the date of his/her joining in the Department (refer to clause O).

Note:

The RS receiving Institute fellowships is required to perform academic duties of 8 hours per week as assigned by the DPGC.

The RS receiving fellowships from any other external funding agency is also required to perform the academic duties as per the norms of the respective funding agencies.

The continuation of the Institute fellowship or its enhancement is subject to satisfactory academic progress and performance of the assigned duties by the RS as per prevailing norms.

**H)      Important Dates**

| Sr. No. | Activity | Date |
|---|---|---|
| 1. | Last date for submission of Applications (Strictly through Online Mode) | **28.04.2024** |
| 2. | Display of list of eligible candidates by the concerned HOD in the Institute website | **01.05.2024** |
| 3. | Written Test (if required, in the respective Department. Reporting time 10.00 AM) **Through offline (Physical) mode only.** | **09.05.2024** |
| 4. | Display of list of candidates eligible for presentation & interaction | **09.05.2024 by 4:00 PM in the respective Departments** |
| 5. | Presentation/interaction by all eligible candidates **Through offline (Physical) mode only.** | **10.05.2024** |
| 6. | Display of list of selected candidates | **13.05.2024** |
| 7. | Deposition of fee (Online) | **14.05.2024 to 25.05.2024** |
| 8. | Physical Reporting in the Institute/ Document Verification and Constitution of RACs | **22.07.2024 to 26.07.2024** |
| 9. | Commencement of Classes | **29.07.2024** |

All the dates mentioned above are tentative and subject to change at any stage by the competent authority. All the candidates interested in seeking admission are requested to visit the Institute website regularly for updates.

**I)  It is mandatory for all applicants to fill the preferences of prospective supervisors as per the mandatory requirement for admission to Ph.D. Program in the online application form.**

The research domain of the Faculties is available on the Institute Website www.nitj.ac.in and the candidates can view the same under the Faculty head on the Institute website.

**J)** All disputes pertaining to the admissions shall fall within the jurisdiction of Jalandhar only.

**K)** All admissions will be provisional till these are confirmed subject to medical fitness, payment of all the fees, fulfillment of eligibility conditions, and verifications of certificates by the Academic Section of the Institute.

**L)** After payment of admission fee, no fee refund request shall be entertained in any case of surrender of seat.

**M)** Only applications submitted on the website of the institute (www.nitj.ac.in) with supporting documentation will be considered. Hardcopy applications or applications by email will not be considered.

**N)** The admission for this July-December, 2024 session and the award of the Ph.D. degree shall be strictly in accordance with the Ordinances and Regulations for PH.D. PROGRAMME 2023 approved by the Institute Senate the copy of which are available on https://www.nitj.ac.in/template/index.html?id=64ccc1baf936ec1417f91875?category=newpage.

**O)** For all purposes, the date of commencement of classes will be treated as the Registration Date for all admitted students of this July-December 2024 session.

**P)** In case of any urgent requirements/exigencies the entrance test and interactions may be conducted through online mode for the deserving candidates. The request in this regard will be taken care by the DPGC of the concerned department.

**Q)** All the admitted candidates shall be governed by the Ph.D. regulations of the Institute and other instructions issued by the Institute time to time.

**R)** The Institute reserves the right to modify or cancel this Advertisement/any part of this Advertisement at any stage.

*-Sd/-*
**Dean Academic**