



डा बी आर अम्बेडकर राष्ट्रीय प्रौद्योगिकी संस्थान, जालन्धर-144011
Dr B R AMBEDKAR NATIONAL INSTITUTE OF TECHNOLOGY, JALANDHAR - 144011

**Admission to PhD (Full Time & Part Time) Programme in Engineering, Sciences,
Humanities and Management for the Academic Year 2019-2020 (Session January-2020)**

Applications are invited for admission to PhD (Full Time & Part Time) Programme in Engineering, Sciences, Humanities and Management for the Academic Year 2019-2020 (Session January-2020). The Broad areas of Research, Eligibility Criteria, Selection Procedure, Reservation, Teaching Assistantship-cum-Scholarships 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 30.12.2019.

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



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Admission to PhD (Full Time& Part time) Programme for the Academic Year2019-2020 (Session January-2020)
A) PhD (Full Time, Admission under financial support from NIT Jalandhar and Part-Time without financial support):

| Sr. No. | Department Email address of HOD | PhD (Full Time/Part-Time) (Broad Areas of Research) |
|---------|---|---|
| 01 | Biotechnology obt@nitj.ac.in | Bioprocess Engineering, Environmental Biotechnology, Microbial Biotechnology, Biomaterials and biopolymers, Tissue Engineering, Nanobiotechnology, Biofilms based bioprocess, Bioremediation, Ecotoxicity of pollutants |
| 02 | Chemical Engineering och@nitj.ac.in | Transport Phenomena, New and Renewable Energy, Hydrocarbon Engineering, Environmental Engineering, Chemical Process Safety, Nanotechnology, Process Modelling and Simulation, CFD, Catalysis and Reaction Engineering, Bio - Materials, Polymers, New trends in Chemical Engineering. |
| 03 | Civil Engineering oce@nitj.ac.in | Structural Engineering, Geotechnical Engineering, Transportation Engineering |
| 04 | Computer Science & Engineering ocs@nitj.ac.in | Wireless Sensor and Adhoc Network, Computer Networks, Information Security, Wireless networks, Big data, Data Mining, Software Engineering, Image Processing, Machine and Deep Learning, Cloud Computing, Internet of Things, NLP, Artificial Intelligence, Soft Computing , Scientific Computing |
| 05 | Electrical Engineering oeic@nitj.ac.in | Power System Economics, Electricity Markets and Wind Power Forecasting, Field computations in HV environments, E-field reduction using Optimization techniques, Substation design, Illumination modeling and design, Condition monitoring of transformers, Bio-systems, Observer design, Chaotic Systems |
| 06 | Electronics & Communication Engineering oeec@nitj.ac.in | Biomedical Signal/Image Processing, MAC layer protocols, M2M Communication Internet of things, Antenna, EBG, RIS & Metamaterials, Games for Health/Autism and Assisted Technologies, Signal processing/ Image Processing, Wireless Communication System, Device Modeling, 2D Material Analysis, Wireless Sensor Networks, Machine Learning, Nanoscale Semiconductor Device and modeling, VLSI Design. |
| 07 | Information Technology ocs@nitj.ac.in | Wireless Sensor and Adhoc Network, Computer Networks, Information Security, Wireless networks, Big data, Data Mining, Software Engineering, Image Processing, Machine and Deep Learning, Cloud Computing, Internet of Things, NLP, Artificial Intelligence, Soft Computing , Scientific Computing |
| 08 | Instrumentation & Control Engineering oeic@nitj.ac.in | Biomedical Engineering, Instrumentation and Control, wireless sensor networks and sensors, signal processing, intelligent virtual instrumentation, power system operation and control, robotics and automation, process optimization, bio sensors, reduced order modeling and soft computing |
| 09 | Industrial & Production Engineering oeie@nitj.ac.in | Industrial Engineering, Production Engineering and Manufacturing Technology. |
| 10 | Mechanical Engineering ome@nitj.ac.in | Mechatronics, Robotics, System Dynamics and Control, Modeling and Simulation of Physical Systems, Biomechanics, Heat Transfer, Fluid Mechanics, Combustion, Computational Fluid Dynamics, Swirling Flows, Solar Energy Utilization, Industrial Heating and Cooling Applications, Alternative refrigerants, Boiling and condensation, Thermal comfort, Electronic cooling, CFD, Heat Transfer, Nano Fluids, Fluid Mechanics |
| 11 | Textile Technology otx@nitj.ac.in | Mechanical and wet processing of textiles, Fabric structure- property relationship, Technical Textiles, Fibre Science, Clothing Comfort, Textile Management, Sustainable Textile, Reduction in waste water load in Textile Industry, Garment Technology |
| 12 | Humanities & Management ohm@nitj.ac.in | Marketing, HR, Entrepreneurship and General Management, Finance Marketing, Entrepreneurship, Financial Economics, Green Marketing, Branding, Sustainable Consumer Behaviour, Retailing, Rural Marketing, English Literature : (Psychoanalysis, Schizoanalysis of Literature, Foucauldian Discourse Analysis, Digital Humanities, Lacanian Metacriticism and Literary Theory and Criticism), English Language and Literature – (Feminist Studies, Queer Studies, Transgender Studies, Postcolonial, Diasporic and Comparative Literature), Sociolinguistics, ELT, Applied Linguistics and Educational Linguistics |
| 13 | Physics oph@nitj.ac.in | Laser Plasma Interaction, Nuclear Physics, Radiation Physics, Particle Physics, Liquid Crystal, Thin Films, Condensed Matter Physics, Nanotechnology |
| 14 | Chemistry ocy@nitj.ac.in | Nano- and environment friendly functional smart materials, Synthetic organic chemistry, Materials chemistry, Crystallography Supramolecular Chemistry, Superabsorbents / Hydrogels, Chemistry of surfactants |
| 15 | Mathematics oma@nitj.ac.in | Analysis, Operation Research, Applied Mathematics, Algebra, PDEs, Soft Computing. |

B) Eligibility Criteria

1) (Full Time& Part Time)

- **Engineering Departments (Sr. No. 1 to 11):** Master's Degree in Engineering/Technology in the relevant area of research along with 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.
- **Science Departments:** 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.
- **Humanities (English Literature & Linguistics):** Master's Degree in the appropriate discipline with 55% marks (or a CGPA of 6.0 on 10 point scale)
- **Management:** Master's degree in Management/related areas of Management (Commerce, Public Administration, Engineering, Law, Mathematics, Statistics, Psychology, Economics, Business Economics, Sociology etc.) with
 - i) 60% Marks (or CGPA of 6.5 on 10 point scale) in the qualifying examination in Engineering/Science/Management.
 - ii) 55% marks (or a CGPA of 6.0 on 10 point scale) in Humanities and Social Sciences.

Note 1: Only primary mode of evaluation (CGPA or percentage) as mentioned in the qualifying degree certificate/mark sheet shall 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

Candidates for PhD admission in Engineering & Sciences Departments must be NET/GATE qualified and in Humanities and Management must be UGC-NET qualified for the award of stipend cum teaching assistantship as per Ministry of HRD norms and Institute norms. Initial award of the scholarship (JRF) at the time of Provisional admission to Ph.D. programme will continue for one year from the date of the issue of the scholarship. There shall be annual assessment of the performance of the Ph.D. scholar for continuation of the scholarship and the criteria for continuing the Institute Fellowship (JRF/SRF).

2) Ph D programmes (Part-Time):

Faculty/Technical/Scientific staff of NITJ; Project staff working under the projects sponsored by MHRD/DST/UGC or some other government agency and coordinated by the institute faculty as certified by the concerned Principal Investigator/Coordinator; External candidates sponsored by Industry/Institute having R & D facility recognized by NITJ having minimum two-years' experience and possessing the same academic qualifications as that for Ph.D. regular candidates, are eligible to apply for Ph.D. 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, Jalandhar, and his/her routine work permit him/her to devote sufficient time for research work.

Candidate/staff working under the projects at NIT Jalandhar, those having appropriate provisions for salaries and contingency grant for the required duration which are sponsored by reputed industrial organization (s) and coordinated by the NIT Jalandhar faculty as Principal Investigator/Coordinator shall also be eligible for admission to Ph.D. programme only if they have at least two years of remaining period at NIT Jalandhar.

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.

3) PhD (Full Time) with external fellowships like JRF/DST INSPIRE etc.

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

The academic qualifications for PhD (Part-time) programmes/ PhD (Full Time) with external fellowships like JRF/DST INSPIRE etc. are the same as that for PhD (Full Time) as mentioned at Sr.No.B.

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 PhD 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 maximum number of seats available in various Departments for admission during January 2020; however, it is not obligatory for the Institute or concerned Department to fill all the seats mentioned in this matrix.

| Sr. No. | Name of the Department | PhD (Full-Time) Seats | | | | | | PhD (Part-Time) Seats | JRF/INSPIRE Fellowship/ etc. Seats |
|---------|---|-----------------------|-----|-----|----|----|-------|-----------------------|------------------------------------|
| | | General | EWS | OBC | SC | ST | Total | | |
| 1. | Biotechnology | 1 | 0 | 1 | 1 | 0 | 3 | - | - |
| 2. | Civil Engineering | 1 | 0 | 1 | 0 | 0 | 2 | 2 | - |
| 3. | Chemical Engineering | 4 | 1 | 2 | 1 | 1 | 9 | 3 | - |
| 4. | Computer Science & Engineering | 3 | 1 | 2 | 1 | 0 | 7 | 2 | - |
| 5. | Electrical Engineering | 1 | 0 | 1 | 1 | 0 | 3 | - | - |
| 6. | Electronics & Communication Engineering | 2 | 1 | 1 | 1 | 0 | 5 | 3 | - |
| 7. | Information Technology | 1 | 0 | 1 | 1 | 0 | 3 | - | - |
| 8. | Industrial & Production Engineering | 2 | 0 | 1 | 0 | 1 | 4 | - | - |
| 9. | Instrumentation & Control Engineering | 1 | 0 | 1 | 1 | 0 | 3 | - | - |
| 10. | Mechanical Engineering | 2 | 0 | 1 | 0 | 1 | 4 | 1 | - |
| 11. | Textile Engineering | 3 | 1 | 2 | 1 | 0 | 7 | 4 | - |
| 12. | Physics | 1 | 0 | 1 | 0 | 1 | 3 | 1 | 1 |
| 13. | Chemistry | 2 | 1 | 1 | 1 | 1 | 6 | 4 | 1 |
| 14. | Mathematics | 2 | 1 | 2 | 1 | 0 | 6 | 1 | - |
| 15. | Humanities & Management | 1 | 0 | 0 | 0 | 0 | 1 | - | 6 |
| Total | | 27 | 6 | 18 | 10 | 5 | 66 | 21 | 8 |

Horizontal Reservation of 5% to PwD candidates in each category (General, EWS, SC, ST, OBC) shall be applicable.

D) Admission Procedure

- The admission to PhD 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.
- Shortlisting of candidates 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 General 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. The details of the Syllabi will be separately notified on the Institute website i.e. www.nitj.ac.in
- The Pattern of Examination shall be as of GATE and NET examination.
- 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.
- 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 PhD 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.

- vi. 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 PhD programme and his/her name shall not be recommended for admission by Departmental Admission Committee.

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 (General/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 General category should apply on separate application forms for the purpose.
- iii. OBC/EWS Certificate must have been issued on or after **1st April 2019** 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 PhD 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, at the Institute level for Full-Time programme (i.e. 40.5% for General, 27% for OBC, 15% for SC and 7.5% for ST and 10% for EWS category) as per the seat matrix shown in this Advertisement.

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.

After the admission in Ph.D. programmes at NIT Jalandhar, stipend cum teaching assistantship (from the Institute under support from MHRD) shall be offered to those admitted Full Time Research Scholars only, who have qualified GATE/NET examination.

- (i) In case, the 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.
- (ii) 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.

H) Important Dates

| Sr. No. | Activity | Date |
|---------|--|--|
| 1. | Last date for submission of Applications | 30.12.2019 |
| 2. | Display of list of eligible candidates by the concerned HOD in the Institute website | 02.01.2020 |
| 3. | Written Test (if required, in the respective Department. Reporting time 9:00 AM) | 06.01.2020 |
| 4. | Display of list of candidates eligible for presentation & interaction | 06.01.2020 by 4:00 PM in the respective Departments |
| 5. | Presentation/interaction by the candidates who have qualified the test | 07.01.2020 |
| 6. | Display of list of selected candidates | 09.01.2020 |
| 7. | Deposition of fee & Registration | 09.01.2020-10.01.2020 |
| 8. | Commencement of classes | 10.01.2020 |

All the dates mentioned above are tentative 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) All disputes pertaining to the admissions shall fall within the jurisdiction of Jalandhar only.
- J) 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. The candidates whose result will be awaited as on date of counselling must have to submit the result (original/revaluation) immediately after its notification but latest by **January 30, 2019**, failing which the admission may be cancelled.