



राष्ट्रीय प्रौद्योगिकी संस्थान जमशेदपुर NATIONAL INSTITUTE OF TECHNOLOGY JAMSHEDPUR

(An Institution of National Importance under MHRD, Government of India)

Admission to Ph.D. Programme for Autumn Semester 2019-2020

INFORMATION BROCHURE

1. ABOUT THE INSTITUTE

National Institute of Technology (NIT) Jamshedpur is an Institution of National Importance set up by an Act of Parliament (Act 29 of 2007) namely, the National Institutes of Technology Act, 2007, which received the assent of the President of India on the 5th June, 2007. The provision of the Act has come into force with effect from 15th August, 2007 as per Notification No.1384 (E) dated 9th August, 2007 of the MHRD (Department of Higher Education), New Delhi. As per the provisions of the said Act, NIT Jamshedpur offers academic programmes: B. Tech. (Hons.), M. Tech., MCA, M. Sc. and Ph.D. in various disciplines. NIT Jamshedpur has well qualified and experienced faculty and dedicated supporting staff.

2. Admission to Ph.D. Programme for Autumn Semester 2019-2020.

2.1 Name of the Departments offering the Ph.D. Programme and Research Areas

Sl. No.	Name of the Department	Research Areas
1	Civil Engineering (CE)	Structural Engineering, Concrete Technology, Earthquake Engineering, Geotechnical Engineering, Vibration and Stability, Stability Analysis, Foundation Engineering, Ground Improvement, Reinforced Earth, Transportation Engineering, Water Resources Engineering, Open Channel Hydraulics, Ground Water Hydrology, Environmental Engineering, Structural Engineering, Concrete Technology, Earthquake Engineering, Geotechnical Engineering, Vibration and Stability, Stability Analysis, Foundation Engineering, Ground Improvement, Reinforced Soil Structures, Transportation Engineering, Water Resources Engineering, Open Channel Hydraulics, Ground Water Hydrology, Environmental Engineering
2	Computer Applications (CA)	Supply Chain Management, Data Mining, Computational Complexity, Software Engineering, Soft Computing, system reliability modelling and analysis, software reliability, machine learning, pattern recognition, data analytics, IOT, Network security
3	Computer Science and Engineering (CS)	Image Processing, Comp Networks, Network Security, Software Engineering, Database analysis etc.
4	Electrical Engineering (EE)	Control Systems, Power Systems, Power Electronics, Power System Protection, Renewable Energy Systems, Electrical Machines and Drives
5	Electronics and Communication Engineering (ECE)	Communication Systems, wireless communication, Optical Fibre Communication & Optical logic devices, Communication Networks, Wireless Sensor Networks, Micro/Nano Electronic Devices, Sensors/actuators, Microelectronics, MEMS, Analog Integrated Circuits, Signal Processing/ Digital Signal processing/ Image Processing, Analog and Digital VLSI Design, Microwave and RF Engineering, Antenna Design, Embedded systems, IOT, Microprocessor & Microcontrollers, Soft Computing & Its Applications in Communication, Solar Energy, Material Characterization

6	Mechanical Engineering (ME)	Solar Energy, I.C Engines, Gas Turbines, Power Plants, Combined Cycle, Energy Systems, Heat & Mass Transfer, Mechanism, CFD, Integrated Energy Systems, Fluid Flow, Thermal Engineering, Renewable Energy, Machine Design, CAD /CAM, Value Engineering, TPM and TQM, Refrigeration and Air- Conditioning, Vibration, Composite Materials, Process Integration, Pinch Technology, Thermodynamics of Energy Systems.
7	Metallurgical and Materials Engineering (MME)	Process Metallurgy, Corrosion Engineering, Phase Transformation, Structure–Property Relationship, Physical Metallurgy, Iron and Steel making, Extractive Metallurgy, Mechanical Metallurgy, Fatigue, Fracture and Failure Analysis, Geology, Mineral Beneficiation, Bio-hydro, Metallurgy, Bio-technology, Metallic Gas, Nanotechnology, Hydro Metallurgy. Process Metallurgy, Corrosion Engineering, Physical Metallurgy, Mechanical Metallurgy, Extractive Metallurgy, Mineral Beneficiation. Foundry Technology.
8	Manufacturing Engineering (MFG)	Manufacturing processes; Manufacturing management; Product design and development; CAD/CAM; Rapid prototype and Reverse engineering; Industrial engineering and management; Manufacturing Systems Engineering; Lean Manufacturing; Toyota Production system; Sustainable manufacturing. Robotics and Automation , Composite material, Surface coating, Micro machining, Advanced Welding, Energy management, Non- traditional Manufacturing, Advanced Casting, Flexible Manufacturing system,
9	Chemistry (CH)	Surface Science, Environmental Chemistry, Waste Disposal Management, Physical Chemistry, Analytical Chemistry, Surface Chemistry, Materials Science, Aerosol, Atmospheric Chemistry, Organic Chemistry.
10	Humanities, Social Sciences and Management (HSSM)	(a) English: American Literature, English Literature, Indian Writing in English, ELT, Literary Theory and Criticism, Dalit Literature (b) Management: Human Resource Management & OB, Marketing Management, Business Ethics, Financial Management, Financial Inclusion, MSME, General Management, Strategic Management
11	Mathematics (MA)	Operation Research, Statistics, Multivariate Polynomial System, Numerical Analysis, Fractional Calculus, Integrated Equations. Fluid Dynamics, Magneto-hydrodynamics, Turbulent Fluid Flow and Sediment Transport Modeling, Thin Film Flows, Commutative Algebra, Computational Algebra, Complex Analysis, Cryptology & Network Security, Linear Algebra & Matrix Theory, Control Theory
12	Physics (PH)	Laser Applications, Nuclear Physics, Experimental condensed matter physics (magnetism, strongly correlated system), nano-materials and molecular spectroscopy, Computational Physics, Functional Materials

2.2 Categories of Ph. D programme:

(a) Institute Research Scholars (Full Time):

Candidates under this category are entitled for fellowship from the Institute as per MHRD norms. The candidate must have qualified GATE.

(i) Vacancy in various department under this category:

Department	CH	CE	CS	CA	HS	EC	EE	MA	ME	MM	PIE	PH	Total
vacancy	04	10	03	03	03	07	07	06	13	05	06	03	70

Reservations for SC/ST/OBC/PWD/EWS are applicable as per GOI norms.

(b) Sponsored Research Scholars (Full Time):

Candidates under this category receive financial support from AICTE under QIP scheme or from Government Institutes/ organisations under study leave. Foreign students shall be sponsored by their Government or awarded scholarship by Govt. of India, ICCR or other such organisations/ agencies.

(c) Self Financed Research Scholars (Full Time):

Candidates under this category are those who support themselves or receive fellowship from other agencies such as UGC, CSIR, DST, JEST, etc.

(d) Self Financed Research Scholars (Part Time):

- (i) Candidates under this category shall be persons employed in nearby (within 40km radius from N.I.T. Jamshedpur) Industries/Institutes/R&D organisations. They shall be required to furnish no objection certificate from the employer.
- (ii) Candidates employed in Industries/Institutes/R&D organisations outside 40 km radius shall be required to get leave from the employer to meet minimum residential requirement of one year to complete coursework. There should be adequate research facilities and a co-supervisor with Ph. D degree in the relevant area of research should be available at their work place.

(e) Faculty/Staff/Sponsored Project Fellow of N.I.T. Jamshedpur (Part Time):

Regular faculty members, regular staff members and sponsored project fellows of N.I.T. Jamshedpur are eligible for admission to Ph. D program in concerned Departments.

2.3 Qualification for Eligibility:

(a) Ph. D in Engineering:

Master Degree in relevant branch of Engineering/Technology with minimum 60% marks or equivalent CPI 6.5

OR

Bachelor's degree in relevant branch of Engineering/Technology with minimum 75% marks or equivalent CPI 8.0

(b) Ph. D in Sciences, Computer Applications, Humanities, Social Sciences and Management

Master's Degree in the relevant subject with a minimum 60% marks or equivalent CPI 6.5

OR

Bachelor's degree in relevant branch of Engineering with minimum 75% marks or equivalent CPI 8.0

3.0 Selection Procedure

The selection procedure for admission to Ph.D. Programme is based on consistently good academic record, written test and interview performance. Reservations for SC/ST/OBC/ PWD/ EWS are applicable as per GOI norms.

4.0 How to Apply

The online application form and the information brochure for admission to Ph.D. programme are available on Institute website: www.nitjsr.ac.in. Registration fee Rs. 1,000/- for OPEN/OBC/ EWS candidates and Rs. 500/- in the case of SC/ST/PWD candidates.

- The candidates who are employed and wish to do Ph.D. must submit SPONSORSHIP/ NO OBJECTION CERTIFICATE from the employer at the time of admission, without which admission will not be possible.
- Check the following documents are attached to the application form:
 - Proof of Payment
 - Self-attested copy of SSC in support of Date of Birth
 - Self-attested copy of intermediate /(10+2) Certificate
 - Self-attested copies of Degree certificates and Mark sheets of all the qualifying examinations
 - Self-attested copy of the caste certificate (in case of SC/ST candidates)
 - For OBC candidates, self-attested copy of OBC certificate issued after 31/03/2019 only as per the format given in the Annexure-I is accepted
 - List of publications (if any)
 - Self-attested copy of EWS certificate issued after 31/03/2019 by the competent authority.

5.0 Important Dates

Advertisement in the Newspapers and Institute website	22/04/2019 (Monday)
Last date for receipt of application forms	03/06/2019 (Monday)
Intimation regarding interview call to be posted / uploaded on institute website	17/06/2019 (Monday)
Date of written test and interview at NIT Jamshedpur	01/07/2019 (Monday)
Date of announcement of results	03/07/2019 (Wednesday)
Date of admission	15 -16 July, 2019 (Monday & Tuesday)

Note: Students may require to stay one more day if interview is not completed on 01/07/2019.

6.0 GENERAL INSTRUCTIONS

- Candidates should specify broad areas of research in the application form.
- All candidates seeking admission to Ph. D. programme are required to fill and upload their application form (online) along with all required documents before 03/06/2019.
- Institute reserves the right to reject the applications for which faculty is not available/not eligible for guidance
- Incomplete application forms and uploaded after the last date will be rejected.
- Canvassing in any form will disqualify the candidates.
- List of short-listed candidates for the interview will be uploaded on Institute website only.
- The candidates are required to visit our website for fee structure/faculty expertise etc. and also advised to visit our website regularly for updated information about the admission to Ph.D. programme for the Autumn Semester 2019-20.
- No separate interview letter / communication will be sent to any individual
- All candidates selected for admission shall be required to deposit the Institute fee at the time of admission

Address for Correspondence

Dean (Academic)
National Institute of Technology Jamshedpur
Jamshedpur - 831 014, Jharkhand (India)
Telephone: 0657-2372412, 23724245.

ANNEXURE- I

Proforma for Other Backward Class (OBC Certificate)

**(CERTIFICATE TO BE PRODUCED BY OTHER BACKWARD CLASSES APPLYING FOR
ADMISSION TO CENTRAL EDUCATIONAL INSTITUTIONS (CEIs), UNDER GOVERNMENT OF
INDIA)**

This is to certify that Shri/Smt./Kum. _____ Son/Daughter of
Shri/Smt. _____ of Village/Town

_____ district/Division

_____ in the _____ State belongs to the

_____ Community which is recognized as a backward class under:

- i) Resolution No. 12011/68/93- BCC(C) dated 10/09/93 published in the Gazette of India Extraordinary Part I Section I No.186 dated 13/09/93.
- ii) Resolution No. 12011/9/94-BCC dated 19/10/94 published in the Gazette of India Extraordinary Part I Section I No. 163 dated 20/10/94.
- iii) Resolution No. 12011/7/95-BCC dated 24/05/95 published in the Gazette of India Extraordinary Part I Section I No. 88 dated 25/05/95.
- iv) Resolution No. 12011/96/94-BCC dated 09/03/96.
- v) Resolution No. 12011/44/96-BCC dated 6/12/96 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 11/12/96. vi) Resolution No. 12011/13/97-BCC dated 03/12/97.
- vi) Resolution No. 12011/99/94-BCC dated 11/12/97.
- vii) viii) Resolution No. 12011/68/98-BCC dated 27/10/99.
- ix) Resolution No. 12011/88/98-BCC dated 6/12/99 published in the Gazette of India Extraordinary Part I Section I No. 270 dated 06/12/99.
- x) Resolution No. 12011/36/99-BCC dated 04/04/2000 published in the Gazette of India Extraordinary Part I Section I No. 71 dated 04/04/2000.
- xi) Resolution No. 12011/44/99-BCC dated 21/09/2000 published in the Gazette of India Extraordinary Part I Section I No.210 dated 21/09/2000. xii) Resolution No. 12015/9/2000-BCC dated 06/09/2001.
- xiii) Resolution No. 12011/1/2001-BCC dated 19/06/2003.
- xiv) Resolution No. 12011/4/2002-BCC dated 13/01/2004.

xv) Resolution No. 12011/9/2004-BCC dated 16/01/2006 published in the Gazette of India Extraordinary Part I Section I No.210 dated 16/01/2006.

Shri/Smt./Kum. _____ and/or his family ordinarily reside(s) in the

_____ District/Division of _____ State. This is also to certify that he/she does not belong to the Persons/sections (Creamy Layer) mentioned in Column 3 of the Schedule to the Government of India, Department of Personnel & Training O.M. No. 36012/22/93-Estt.(SCT) dated 08/09/93 which is modified vide OM No. 36033/3/2004 Estt. (Res.) dated 09/03/2004 or the latest notification of the Government of India.

Dated: District Magistrate/Competent Authority:

Seal

NOTE:

- (a) The term "Ordinarily" used here will have the same meaning as in Section 20 of the Representation of the People Act, 1950.
- (b) The authorities competent to issue Caste Certificates are indicated below:
 - i) District Magistrate / Additional Magistrate / Collector / Deputy Commissioner / Additional Deputy Commissioner /Deputy Collector / 1st Class Stipendiary Magistrate / Sub-Divisional Magistrate /Taluka Magistrate / Executive Magistrate / Extra st Assistant Commissioner (not below the rank of 1 Class Stipendiary Magistrate)
 - ii) Chief Presidency Magistrate / Additional Chief Presidency Magistrate / Presidency Magistrate.
 - iii) Revenue Officer not below the rank of Tehsildar' and iv) Sub- Divisional Officer of the area where the candidate and / or his family resides.
- (c) The annual income /status of the parents of the applicant should be based on financial year ending March 31, 2018.

Declaration /undertaking - for OBC Candidates only

I, _____ Son/Daughter of Shri _____

resident of village/town/city _____ district _____ State hereby declare that I belong to the _____ community which is recognized as a backward class by the Government of India for the purpose of reservation in services admission in Central Government Institutions as per orders contained in Department of Personnel and Training Office Memorandum No. 36012/22/93 – Estt. (SCT), dated 8/9/1993. It is also declared that I do not belong to persons/sections (Creamy Layer) mentioned in Column 3 of the Schedule to the above referred Office Memorandum, dated 8/9/1993, which is modified vide Department of Personnel and Training Office Memorandum No. 36033/3/2004 Estt. (Res.) dated 9/3/2004 or the latest notification of the Government of India.

I also declare that the condition of status/annual income for creamy layer of my parents/guardian is within prescribed limits as on financial year ending on March 31, 2019.

Place: Signature of the Candidate

Date:

Declaration/undertaking not signed by Candidates will be rejected