



NATIONAL INSTITUTE OF TECHNOLOGY JAMSHEDPUR - 831014, JHARKHAND

(An Institution of National Importance, MHRD, Government of India, New Delhi)

Information Brochure for Ph.D. Programme 2013-14 (SPRING SEMESTER)

GENERAL INFORMATION

ABOUT THE INSTITUTE

National Institute of Technology Jamshedpur is one of the National Importance Institutions for technical education in India. This was formerly known as Regional Institute of Technology Jamshedpur. 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 S.O.1384 (E) dated 9th August, 2007 of the MHRD (Department of Higher Education), New Delhi. As per the provision of the said Act, this Institution runs on non profitable basis. NIT Jamshedpur offers academic programmes: B.Tech. (Hons.), M.Tech., MCA and Ph.D. in the various disciplines. NIT Jamshedpur has well qualified faculty and dedicated supporting staff.

1. Introduction

Applications are invited for admission to the Ph.D. Programme of the Institute in following Departments:

Department	Code
• Civil Engineering	CE
• Electrical and Electronics Engineering	EE
• Electronics and Communication Engineering	EC
• Mechanical Engineering	ME
• Metallurgical & Materials Engineering	MM
• Manufacturing Engineering	MF
• Computer Applications	CA
• Chemistry	CH
• Mathematics	MA
• Physics	PH

2. Admission

Admission to Ph.D. Programme will be offered in the following two categories:

- Institute Research Scholar (RS) which is stipendiary.
- Sponsored Scholar (SS) which is non-stipendiary and is only applicable to candidates employed in reputed industry/ government organizations / research institutions and with a minimum experience of 5 years.

Reservation for **SC/ST/OBC** is applicable as per Govt. of India rules.

3. ELIGIBILITY & ACADEMIC REQUIREMENTS FOR ADMISSION TO Ph.D. PROGRAMME

The candidates for Ph.D. Programme may be offered admission, based on certain minimum academic requirements to be satisfied by the candidates as given below:

For Stipendiary Research Scholar

1) Faculty of Engineering:

Bachelor's / Master's Degree in Engineering / Technology in the relevant discipline with a minimum 6.5 CGPA or 60% marks in both Bachelor's and Master's levels from recognized Technical Institute or University. [Minimum 6.0 CGPA or 55% marks for **SC/ST** candidates]

Only those Candidates will be considered for Ph.D. programme.

- Whose admission to M. Tech /M.S/ME programmes is through GATE score
OR
- Who holds a valid GATE score (i.e. those qualified in GATE 2012 or 2013)
OR

B. Tech from an Institute of National Importance with a valid GATE Score Card and having excellent academic record throughout.

2) Faculty of Science (Chemistry, Physics and Mathematics):

Bachelor's / Master's degree in Sciences only in the relevant discipline with a minimum 6.5 CGPA or 60% marks in both Bachelor's and Master's levels from recognized Institute or University. [Minimum 6.0 CGPA or 55% marks for **SC/ST** candidates].

Only those Candidates fulfilling the following requirements will be considered for Ph.D. programme.

- GATE or UGC/CSIR/NBHM/UGC-NET fellowship for M. Sc. candidates.

3) Faculty of Computer Applications

MCA with M. Tech in Engineering with a minimum 6.5 CGPA or 60% marks in Master's levels from recognized Institute or University. [Minimum 6.0 CGPA or 55% marks for **SC/ST** candidates].

Only those Candidates will be considered for Ph.D. programme.

- Whose admission to M. Tech / M.S / ME programmes is through GATE score
OR
- Who holds a valid GATE score (i.e. those qualified in GATE 2012 or 2013)

Candidates having valid GATE/CSIR/NBHM/UGC-NET score will get preference.

For Sponsored Research Scholar from Industry / Research Lab

- B. Tech with 10 years of industrial / research experiences.
- M. Tech with 5 years of industrial / research experiences.

The candidate should be presently employed in a limited company with turnover in excess of 10 crores and employing at least 5 B. Tech or M. Tech Graduates. They are required to produce a NOC cum Sponsorship Certificate from their employer along with relevant experience certificates on employer's letter head (containing details like website address, phone and fax number, postal address etc.) from present and previous employers.

4. Selection Procedure

The admission to Ph.D. Programme will be on the basis of weightage as given below:

- | | |
|--|-----|
| a) Overall academic performance (to be fixed by the Institute) | 70% |
| b) Interview conducted by the Department | 30% |

All candidates selected for admission shall be required to deposit the requisite Institute fee at the time of admission.

Issual of interview letter, selection and admission to the Ph.D. Programme will be governed by the Institute Ph.D. Regulations and Information Brochure.

5. Semester Registration

A scholar will have to register in each semester till the submission of thesis, by payment of fees as applicable. Generally, registration for Autumn Semester will be in July/August and Spring Semester in December/January.

6. Course work

Each scholar (RS/SS category) admitted to Ph.D. Programme will complete a minimum of 12 credits and maximum of 20 credits through course work allocated by Doctoral Scrutiny Committee (DSC). If a required course is not available in the existing curricula, instructions in the subject will be imparted in "self study" mode and which shall have all evaluation components as prescribed for a regular course. All Research Scholars will have to obtain minimum grade of 'C' in individual subjects so assigned. If the grade obtained by a candidate in any subject is below 'C', the candidate is required to repeat that subject and clear it with grade not less than C. Should the candidates fails to clear the coursework within one year of the course enrollment, the DSC may review the performance of the candidate and recommend the change of course work.

Research scholar selected in the Sponsored Scholar category from industry and research institute will have to complete the allotted course work within two years of the joining of Ph.D. Programme

7. Residential Requirement

Normally, a candidate in the RS Category has to devote at least 2-3 years of study and research to complete allotted course work. Within two years, Research scholar in the SS category will have a minimum residential requirement of one year which may be reduced to one semester by the DSC to complete the course work.

8. Registration

A candidate is required to give a seminar talk on the topic of his research work within one year of enrolment or within one year of completion of the course work as the case may be. The seminar talk will be delivered to an open audience in the presence of the DSC and DAC (PG & R). If the seminar is satisfactory, the candidate will be allowed to register for the degree. However, if the DSC and DAC (PG & R) is not satisfied by the seminar talk, the candidate will be required to deliver another talk with suitable modification or improvement.

9. Monitoring the Work and Progress

Each research scholar will be assigned a Supervisor (not more than two) by the Department. The research work and progress of the scholars will be monitored by the DSC specially appointed for each scholar. The work and progress of the scholars in each semester will be assessed by the DSC and the thesis supervisor and only on satisfactory progress as approved by the DSC, the scholars will be allowed to continue in the programme.

10. Stipend / Financial Assistance

Institute research scholarship is available to full-time research scholars (RS) who are not receiving any financial support from other agencies or State or Central government. They are required to assist the Department in

academic work for at least 8 hours per week as per guidelines issued by MHRD. Govt. of India in addition to satisfying other conditions for award of renewal of the research scholarship.

The present rates of research scholarship[#] is as follows:

Qualification	1 st & 2 nd year	3 rd & 4 th year
M. Tech	Rs. 18,000/- per month	Rs. 20,000/- per month
B. Tech / M. Sc. / MCA with GATE/CSIR/NBHM/UGC-NET qualification	Rs. 16,000/- per month	Rs. 18,000/- per month

No Research scholar shall be permitted to accept or hold any appointment, paid or otherwise or receive any emoluments, salary, stipend or any other scholarship during their Ph.D. tenure. Violation of this clause will lead to immediate cancellation of admission and penalty.

However, Sponsored Scholar (SS) will not get any Research Scholarship.

11. Institute Fee

Following are the details of admissible fee:

Sl. No.	Head of Fees	(1 st Semester)		(2 nd Semester onwards)	
		For General Category (in Rupees)	For SC / ST Category (in Rupees)	For General Category (in Rupees)	For SC / ST Category (in Rupees)
A. Admission / Tuition Fees (IRG)					
1	Admission Processing Fee	1000.00	1000.00	00.00	00.00
2	Tuition Fee	17500.00	17500.00	17500.00	17500.00
	Total `	18500.00	18500.00	17500.00	17500.00
B. Institute Fees (Common for all students)					
4	Electric Charge	1000.00	1000.00	1000.00	1000.00
5	Water Charge	1000.00	1000.00	1000.00	1000.00
6	e-campus Fee	500.00	500.00	500.00	500.00
7	Identity Card	100.00	100.00	00.00	00.00
8	Examination Fee	600.00	600.00	600.00	600.00
9	Training & Placement	500.00	500.00	500.00	500.00
10	Bus Charge	1000.00	1000.00	1000.00	1000.00
11	Library	1000.00	1000.00	1000.00	1000.00
12	Computer & Internet	1000.00	1000.00	1000.00	1000.00
13	Students Welfare	300.00	300.00	300.00	300.00
14	Sports	500.00	500.00	500.00	500.00
15	Cultural & Technical Activities	1000.00	1000.00	1000.00	1000.00
	Total `	8500.00	8500.00	8400.00	8400.00
C. Group Insurance (Fees will be as per actual)					
16	Insurance Fee	500.00	500.00	500.00	500.00
D. One Time Payment (at admission)					
17	Institute Caution Money (Refundable)	10000.00	10000.00	00.00	00.00
18	Development Fund	10000.00	10000.00	00.00	00.00
19	Alumni Membership	1000.00	1000.00	00.00	00.00
	Total `	21000.00	21000.00	00.00	00.00
	Grand Total ` (A+B+C+D)	48500.00	48500.00	26400.00	26400.00

12. Hostel Facilities

Accommodation shall not be provided to the Ph.D. students for the session 2013-14, due to shortage of hostel facility. Also they will not be provided any House-rent allowance.

13. How to apply for admission to Ph.D. program

The application form and other relevant information for admission to Ph.D. program may be downloaded from the Institute website: www.nitjsr.ac.in.

Applications form, duly filled in, must contain a crossed Demand Draft for Rs. 1,500/- (Rs.750/- for **SC / ST** candidates) towards application fee drawn in favour of **Director, National Institute of Technology, Jamshedpur** payable at **SBI RIT Jamshedpur (Code 1882)** and should reach **Chairman – (PG & R) AdmissionNIT Jamshedpur 831 014 on or before 16/11/2013**.

The following documents (whichever applicable) arranged in the order given below should be enclosed along with the duly filled application:

- i) Three recent passport size photographs of the candidate attested by Gazetted Officer / Principal of the College / Institute last attended.
- ii) Self attested copy of GATE score or UGC/CRIR/NBHM/UGC-NET fellowship.
- iii) Self attested copy of marks-sheet & degree certificate of the qualifying examination
- iv) Self attested copy of provisional certificate of the qualifying examination.
- v) Self attested copy of Under-Graduate degree certificate and marks-sheets.
- vi) Self attested copy of certificate of matriculation/ Xth class as the proof of age of the candidate.
- vii) Self attested copy of caste certificate in case of **SC/ST** candidates from the competent authority (not below the rank of Tahsildar)
- viii) Self attested copy of caste certificate in case of **OBC** candidate from competent authority (not below the rank of Tahsildar) indicating the status regarding Creamy layer for the financial year ending 31st March 2013.
- ix) Self attested copy of experience certificate
- x) Research Proposal (SoP) as per the performa
- xi) Profile of the employing company (in case of SS category)
- xii) No-Objection-Certificate from the employer (in case of SS category) in support of your application.
- xiii) Profile of the organization/ employer in case of SS category candidate
- xiv) No-Objection-Certificate duly signed by the HOD/HOS in case of employee of NIT Jamshedpur
- xv) Self attested copy of credentials including AICTE recognized short-term courses attended, research publications, professional qualifications etc.
- xvi) Demand draft towards application fee as per category for the candidate.

Incomplete / incorrect applications will not be considered for admission.

14. Major research area Department-wise

Civil Engineering:

- Structural Engineering
- Concrete Technology
- Soil-structure interaction
- Earthquake Engineering
- Geotechnical Engineering
- Buckling, vibration and stability of composite plate / shell
- Stability analysis, foundation engg., ground improvement, river bank filtration
- Reinforced earth, environmental geo-technique, ground improvement
- Transportation engineering
- Surface water hydrology, river flood flow modeling, water resources systems analysis and rain water harvesting, watershed management

Electrical & Electronics Engineering:

- Instrumentation and control
- Control system
- Power systems
- AC drives, application of power electronics in power system
- Power system and protection
- Renewable energy systems
- Electrical machines and drives

Electronics & Communications Engineering

- Industrial Control Systems
- Non-conventional power generation
- Instrumentation and control systems
- VLSI and embedded systems

Mechanical Engineering:

- Solar energy
- I.C Engine, Gas turbines, Power plants, combined cycle, Energy systems.
- Heat transfer & 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

Metallurgical and Materials Engineering:

- 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 glass
- Nanotechnology
- Hydro metallurgy

Manufacturing Engineering:

- 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
- Energy management

Chemistry:

- Surface science
- Environmental chemistry , waste disposal management
- Biophysical, analytical chemistry, surface chemistry
- Materials science

Computer Applications:

- Software Quality and Reliability, Supply Chain Management

Mathematics:

- Fuzzy logic and its applications
- Operation research and statistics
- Multivariate polynomial system
- Numerical analysis
- Fractional calculus and integrated equations

Physics:

- Laser applications

15. Important dates

Events	Date
Newspaper Advertisement / Internal Advertisement by	26/04/2013 20/10/2013
Last date for receipt of Application form	20/05/2013 16/11/2013

Intimation regarding interview call to be posted on institute website	02/06/2013 28/11/2013
Date of interview at NIT Jamshedpur	22/06/2013 10/12/2013
Date of announcement of result	30/06/2013 20/12/2013
Date of admission	11th & 12nd July 2013 29/12/2013 & 30/12/2013

- No separate interview letter / communication will be made to any individual.
- Visit institute website: www.nitjsr.ac.in regularly for more details and updates.

16. Legal Jurisdiction

All disputes pertaining to the counseling and admission for the Ph.D. programme of NIT Jamshedpur shall fall within the jurisdiction of Jamshedpur, Jharkhand only.

17. Disclaimer

The statement made in the information brochure and all other information contained herein is believed to be correct at the time of publication. However, the Institute reserves the right to make at any time without notice, changes in and additions to the regulations, conditions governing the admission, requirements, seats, fees and any other information, or statements contained in this information brochure. No responsibility will be accepted by the Institute / Chairman – PG & R Admission for hardship or expenses encountered by its students / any other person for such changes, additions, omissions or errors, no matter how they are caused.

Address for correspondence

Chairman – PG & R Admission
National Institute of Technology, Jamshedpur
PO RIT Jamshedpur 831 014
Jharkhand, India
Telephone: 0657-2374248, 23724245
Email: deanacademicnitjsr@gmail.com, sanjay.me@nitjsr.ac.in
Website: nitjsr.ac.in