INDIAN INSTITUTE OF TECHNOLOGY (BANARAS HINDU UNIVERSITY) VARANASI – 221 005

Information Brochure for Admission to Ph.D. Programmes for Even Semester of the Academic Session 2025-26

The P.G. programmes of the Indian Institute of Technology (Banaras Hindu University), Varanasi are aimed at training manpower with sound theoretical and experimental background in frontier areas of research in the engineering, sciences and interdisciplinary subjects. The emphasis is on understanding the scientific basis and engineering principles involved in solving problems of practical importance in the relevant field using multidisciplinary approach. An important component of these programmes is to inculcate the habit of independent thinking and initiative by the candidates in planning and execution of the research work. These programmes seek to train manpower of the highest quality to cater to the needs of industry, R & D organizations and educational institutions.

The Institute has ten Engineering, three Science and a Humanistic Studies Departments and three Interdisciplinary Schools which offer PG programmes in the respective disciplines. Joint registrations for Ph.D. programme involving more than one department/ school are encouraged to promote multi-disciplinary research.

Duly filled-in on-line applications on the prescribed form on our website are invited for admission to programmes for registration in Even semester of session 2025-26 in various disciplines as given in **Annexure–I**. Candidates whose qualifying examination results are not declared at the time of written test / interview may also be considered. In case such candidates are selected, their admission will be provisional subject to the condition that they produce proof of completing all the examinations including the project/thesis examination and the viva voce before the date of registration. Such candidates are required to produce the evidence of their having passed the qualifying degree examination with the minimum marks/grades for eligibility by the last date for document submission as mentioned in the academic calendar (usually about 8 weeks from the date of registration), failing which their admission shall be cancelled.

All forms mentioned in this document are made available on the admission portal. Please use the links provided in the instructions given therein.

1. Ph.D. Programmes

A candidate may apply for any of the four categories of registration subject to the fulfillment of requirements, minimum qualification (1.A.1) and eligibility criteria (**Table 1A, Annexure-I**)

1.A. Full Time Regular Registration Category

Applicants must have the requisite qualification with minimum marks/CPI as mentioned below in the discipline concerned or in an allied discipline/area. A list of allied disciplines and research areas currently available for Ph.D. Programmes is given in **Table 1A** and **1B** respectively of **Annexure – I**. The number of seats with Institute Assistantship available for Ph.D. Programmes in different disciplines are given in **Table 1C** of **Annexure-I**.

1.A.1 Minimum Qualification:

Ph.D. in Engineering

a) Applicants with master's degree in engineering in the discipline concerned or in an allied discipline/area must have a minimum of 60% marks or 6.0 CPI (on a 10.0 point scale) at the master's degree level.
b) Applicants with bachelor's degree in engineering in the discipline concerned or in an allied discipline/area must have a minimum of 75% marks or 7.5 CPI (on a 10.0 point scale) at the bachelor's degree level. Applicant with more than two years of professional experience, the minimum requirement shall be 70% marks or 7.0 CPI (on 10 point scale) at bachelor degree provide the degree is from an Institution funded by the Central Government.

c) Applicants with master's degree in science as an allied discipline/area (where science is an allied discipline/area), must satisfy each of the following criteria:
   (i) A minimum of 65% marks or 6.5 CPI (on a 10.0 point scale) at the master's degree level,
   (ii) A minimum of 60% marks or 6.0 CPI (on a 10.0 point scale) at the bachelor's degree level.

Ph.D. in Pharmacy

a) Applicants with master's degree in pharmacy or in an allied discipline/area must have a minimum of 60% marks or 6.0 CPI (on a 10.0 point scale) at the master's degree level.
b) Applicants with bachelor's degree in pharmacy must have a minimum of 75% marks or 7.5 CPI (on a 10.0 point scale) at the bachelor's degree level. Applicant with more than two years of professional experience, the minimum requirement shall be 70% marks or 7.0 CPI (on 10 point scale) at bachelor degree provide the degree is from an Institution funded by the Central Government.

Ph.D. in Sciences

a) Applicants with master's degree in science in the discipline concerned or in an allied discipline/area must have a minimum of 60% marks or 6.0 CPI (on a 10.0 point scale) at the master's degree level.
b) Applicants with four year bachelor's degree in Science in the discipline concerned or in an allied discipline/area must have a minimum of 75% marks or 7.5 CPI (on a 10.0 point scale) at the bachelor's degree level. Applicant with more than two years of professional experience, the minimum requirement shall be 70% marks or 7.0 CPI (on 10 point scale) at bachelor degree provide the degree is from an Institution funded by the Central Government.

Ph.D. in Humanistic Studies

a) Applicants with Master's degree in relevant subject or allied subjects with a minimum CPI of 6.00 on a 10.0 point scale (or 60% marks) in the qualifying degree.
b) Applicants with Master's degree in Science or allied subjects with a minimum CPI of 6.00 on a 10.0 point scale (or 60% marks) in the qualifying degree.
c) Applicants with Bachelor's degree in Engineering or Sciences (4-Year program) with a minimum CPI of 7.50 on a 10.0 point scale (or 75% marks) in the bachelor degree. Applicant with more than two years of professional experience, the minimum requirement shall be 70% marks or 7.0 CPI (on 10 point scale) at bachelor degree provide the degree is from an Institution funded by the Central Government.

Ph.D. in Architecture, Planning and Design

a) Applicants with M.Arch. or M.Plan. or M.Des. or in an allied discipline/area must have marks/ with a minimum CPI of 6.00 on a 10.0 point scale (or 60% marks) in the qualifying degree.
b) Applicants with B.Arch., B.Plan. or B.Des. or in an allied discipline/area must have a minimum of 75% marks or 7.50 CPI (on a 10.0 point scale) at the bachelor's degree level.

Interdisciplinary Programmes

a) Ph.D. in Systems Engineering

Applicants with a bachelor's and master's degree in any branch of Engineering must have a minimum of 60% marks or 6.0 CPI (on a 10.0 point scale) at the master's degree level.

Applicants with bachelor's degree in any branch of engineering must have a minimum of 75% marks or 7.5 CPI (on a 10.0 point scale) at the bachelor's degree level. Applicant with more than two years of professional experience, the minimum requirement shall be 70% marks or 7.0 CPI (on 10 point scale) at bachelor degree provide the degree is from an Institution funded by the Central Government.

b) Ph.D. in Industrial Management

Applicants with bachelor's degree in any branch of engineering and master's degree in any branch of engineering/ management must have a minimum of 60% or 6.0 CPI (on a 10.0 point scale) at the master's degree level.

Applicants with bachelor's degree in any branch of engineering must have a minimum of 75% marks or 7.5 CPI (on a 10.0 point scale) at the bachelor's degree level. Applicant with more than two years of professional experience, the minimum requirement shall be 70% marks or 7.0 CPI (on 10 point scale) at bachelor degree provide the degree is from an Institution funded by the Central Government.

c) Ph.D. in Bio-chemical Engineering/Bio-medical Engineering/Materials Science and Technology

Applicants with master's degree in the discipline concerned or in an allied discipline must have a minimum of 60% or 6.0 CPI (on a 10.0 point scale) at the master's degree level.

Applicants with bachelor's degree in the discipline concerned or in an allied discipline must have a minimum of 75% marks or 7.5 CPI (on a 10.0 point scale) at the bachelor's degree level. Applicant with more than two years of professional experience, the minimum requirement shall be 70% marks or 7.0 CPI (on 10 point scale) at bachelor degree provide the degree is from an Institution funded by the Central Government.

d) Ph.D. Programme in Jay Chaudhry Software Innovation Centre

Applicants with a bachelor's and master's degree in any branch of Engineering must have a minimum of 60% marks or 6.0 CPI (on a 10.0 point scale) at the master's degree level.

Applicants with bachelor's degree in any branch of engineering must have a minimum of 75% marks or 7.5 CPI (on a 10.0 point scale) at the bachelor's degree level.

1.A.2 Financial Assistance

Financial assistance in the form of 'Institute Assistantships' is available to the students admitted to Ph.D. programmes under **Full Time regular registration category.** Such students must have qualified GATE/GPAT.

A student, if admitted to the Ph.D. programme of Department of Humanistic Studies under full time regular category, shall get Institute Assistantship if he/she is GATE/GPAT/UGC or CSIR NET-LS qualified. Further, the NET-LS student must have CPI 7.00 (on a 10 point scale or 70% marks in the qualifying examination. The maximum number of such assistantship available at the time of admission shall be the difference of number of permanent faculty and the number of assistantship being availed by the NET-LS qualified students. There shall be one assistantship assigned to a faculty.

Presently the Assistantships @ Rs. 37,000/- per month is available to full time students admitted to the Ph.D. programmes.

A student shall be assigned duties up to eight hours per week by the Departments / Schools to avail the Teaching Assistantship. The renewal of assistantship is contingent on the student's satisfactory performance in the academic programme and in the discharge of assistantship duties on a semester to semester basis.

For the Even Semester of Session 2025-26, the Teaching Assistantships (Institute Assistantship) of the Institute are available for Ph.D. programmes in each department/school as given in **Table 1C of Annexure-I**. The number of available Institute Assistantship should not be considered as available seats. Applicants who are either of sponsored registration category or who are already awarded fellowship by external agencies or Part time registration category or external registration category can submit their applications for admission in departments/schools even if there is no Institute Assistantship available.

No student shall be admitted to Full time Regular Registration Category without Institute Assistantship or National-level Scholarships/Fellowships. No student can get financial assistance from more than one source at a time.

1.A.3 Admission of Candidates having National-level Scholarships

There is a provision for admission to Ph.D. programmes for candidates who fulfill the eligibility criteria for the respective programmes and also have qualified in any of the national level JRF/SRF tests conducted by UGC, CSIR, Department of Biotechnology, Indian Council of Medical Research or DST-INSPIRE fellowship or Dr. K.S. Krishnan Fellowship of DAE, etc.

Applicants must have requisite qualification with minimum marks/CPI (**see Sec. 1.A.1 and Table 1A Annexure-I**). Such candidates may be offered admission after an interview as and when they apply in Departments/Schools where they are eligible. They will be recommended by DPGC to register for the programme at the next available semester. Such candidates who are applying for admission in response to this advertisement for the current session will go through similar process of selection as above.

1.A.4 Admission for candidates who come through QIP Programme

The Institute is now recognized as Major QIP Center of AICTE for research in all disciplines available. For a detailed procedure applicants should contact the AICTE.

1.B. Full Time External Registration category

A candidate working in an external R&D organization or in an industry recognized by the Institute (the list of recognized external R&D organizations and industries is given in **Annexure – II**), which is equipped with necessary research and library facilities can also apply for admission to Ph.D. programmes, provided he/she satisfies the eligibility criteria laid down for the programme concerned (**see Sec. 1.A.1 and Table 1A Annexure-I**). Such a candidate must show satisfactory performance in the interview, must be sponsored by his/her employer and must have been in employment with the sponsoring organization for at least two years at the time of admission.

The employer must undertake to pay full salary to the candidate and relieve him/her from the duty to enable the candidate to stay on the campus and to complete the course work requirements. Further, the requirement of earning credits through course work may be waived off by Dean (Academic Affairs) on the recommendation of DPGC provided the candidate has M.Tech./M.Pharm. as qualifying degree from an IIT.

The candidate should submit a certificate (See Form IV of the Application Form) obtained from his/her organization that the research facilities of his/her organization would be made available to him/her for carrying out research. He/she should also provide the bio-data of the prospective supervisor along with his/her consent, who would be supervising the candidate's work, at his/her organization.

[N.B. Letter of appointment and Form – 16 for two years of service is required from the employer at the time of interview.]

In addition, an R&D organization/industry or a research area in the specific organization may be recognized by the Institute as per the following procedure. On the recommendation of the DPGC, the Dean (Academic Affairs) will constitute a committee to assess and approve an R & D organization/ industry for admission of sponsored candidates to carry out Ph.D. research in a specified area. The committee may, upon inspection, also approve all the areas in which R & D activities are going on in that organization.

An application for admission from a candidate working in the approved organization will be considered only if he/she wishes to work in the approved area.

1.C. Full Time Sponsored Registration Category

A candidate who is sponsored by a teaching institution or by an R&D organization or by an industry can also apply for admission to Ph.D. programmes, provided he/she satisfies the eligibility criteria laid down for the programme concerned (**see Sec. 1.A.1 and Table 1A Annexure-I**). He/she must have been in service of the sponsoring institution/organization for at least two years at the time of admission. The sponsoring organization must specifically undertake to provide full salary to the candidate and to relieve him/her to pursue the programme for its full duration (**See Form I of the Application Form**). Such candidates have to complete the requirements of the programme by **staying on-campus for the full duration of the programme.**

[N.B. Letter of appointment and Form – 16 issued by the employer for two years of service is required at the time of written test / interview. In addition, the candidate must submit an undertaking that he/she will continue to submit Form – 16 for the subsequent years till he/she completes the programme.]

1.D.1 Part-time Internal Category

The Institute offers part-time Ph.D. programmes for permanent staff and faculty members of the Institute, provided they satisfy the eligibility criteria laid down for the programme concerned (**see 1.A.1 and Table 1A Annexure-I**). Such a candidate should submit a no-objection certificate from the Head of the Department/Coordinator of School as the case may be (See Form I & II of the Application Form) as applicable. They will be required to attend to normal duties assigned to them by the Department/School.

1.D.2 Institute Project Category

The Institute offers Ph.D. programmes for research assistants/JRFs/SRFs working in an externally funded research project running in the Institute (IITBHU), provided they satisfy the eligibility criteria laid down for the programme concerned (**see 1.A.1 and Table 1A Annexure-I**). Such a candidate should submit a no-objection certificate from the Principal Investigator (See Form I & II of the Application Form). They will be required to attend to normal duties assigned to them by the Principal Investigator of the research project.

1.D.3 Part-time External Category

The Institute offers part time Ph.D. Programme also to a professionally employed person, who pursues the programme while continuing the duties of his/her service provided the sponsoring institution/organization and engaged in broad areas of Ph.D. Programme applied. He/she must be a regular employee of the sponsoring organization/institution for at least two years. No objection certificate from the Head of the Institution /organization must be enclosed with the application. The candidate must satisfy the eligibility criteria laid down for the programme concerned (**see Sec. 1.A.1 and Table 1A Annexure-I**).

[N.B.: Letter of appointment and Form 16 issued by the employer for two years of service is required at the time of written test/interview. In addition, the candidate must submit an undertaking that he/she shall continue to submit Form 16 for the subsequent years till he/she completes the programme]

1.D.4 Part-time Executive Category

The Institute offers part time executive Ph.D. Programme to persons from Industry/Academia/Government with Bachelor / Master's Degree in Engineering & Technology/ Sciences/ Medical Sciences/ Nursing/ Medical Technology/ Agriculture/ Management/ Pharmacy/ Architecture/ Humanities etc, who pursues the programme while continuing the duties of his/her service. He/she must be a regular employee of the Industry/Academia/Government for at least five years for candidates with Master's degree and seven years for candidates with Bachelor's degree. No objection certificate from the Head of the organization must be enclosed with the application. The candidate must satisfy the eligibility criteria laid down for the programme concerned (**see Sec. 1.A.1**).

Under the executive Ph.D. programme, the admitted student(s) may be allowed to complete his/her course credit requirements using online resources through the NPTEL/SWAYAM portal on the recommendation of DPGC or attend the classes of the Institute in Hybrid mode. Such student(s) will be required to report physically in the Institute for at least seven days per semester. The DPGC may waive coursework requirements for the eligible candidate(s). The minimum duration for part time Executive Ph.D. programme is three years.

[N.B.: Letter of appointment and Form 16 issued by the employer for five years of service is required at the time of written test/interview. In addition, the candidate must submit an undertaking that he/she shall continue to submit Form 16 for the subsequent years till he/she completes the programme]

1.E. Registration of RAV (National Academy of Ayurveda) seats under sponsored category

The Institute offers minimum two seats under Sponsored category for Ph.D. Programme in every semester through National Academy of Ayurveda, Ministry of Ayush under MoU between IIT(BHU) and Rashtriya Ayurveda Vidyapeeth (National Academy of Ayurveda), Ministry of Ayush, Govt. of India. IIT(BHU) will admit Ph.D. Scholar in the field of Ayurveda through contemporary sciences. The candidate must satisfy the eligibility criteria laid down for the programme concerned (**see 1.A.1 and Table 1A Annexure-I**).

1.F. Registration of MoRTH officials under Civil Engineering Department

The Institute offers three seats (supernumerary) for Ph.D. Programme in this semester in Civil Engineering Department for MoRTH officials under MoU between IIT(BHU) and Ministry of Road Transport and Highways (MoRTH). IIT(BHU) will admit Ph.D. Scholars on the following topics:

1. Development of Codal Guidelines for Performance Based Mix Design based for Marshall Mixes (for plant produced mixes)
2. Developing Implementable Passenger Card Unit (PCU) for Field Usage and Nationwide Transferability

The candidate must satisfy the eligibility criteria laid down for the programme concerned (**see 1.A.1 and Table 1A Annexure-I**).

1.G. Registration of NMCG officials under Civil Engineering Department

The Institute offers seats (supernumerary) for Ph.D. Programme in this semester in Civil Engineering Department for NMCG officials under MoU between IIT(BHU) and National Mission for Clean Ganga, Ministry of Jal Shakti, Govt. of India (NMCG). IIT(BHU) will allow the officials of NMCG/Co-PIs of the project to enroll in the Master and Ph.D. courses. After enrollment in the Ph.D., candidates can complete their course work through NPTEL/Swayam portal while discharging their duties in their organization. In some cases, the requirement of the earning credits through course work may be waived off if the candidate has M.Tech./M.Engg. as a qualifying degree from an IIT/International Institute (QS Rank within 100).

The candidate must satisfy the eligibility criteria laid down for the programme concerned (**see 1.A.1 and Table 1A Annexure-I**).

2. SELECTION CRITERIA

Admission to Ph.D. Programme

1. Admission will be based on written test/ interview or combination of both of the candidates shortlisted by the Department/School concerned.
2. The following category of applicants shall be **exempted from appearing in the written test**:
   a) External Registration Category
   b) Sponsored Registration Category
   c) Part-time Registration (Internal/External/Executive) and Institute Project Category
   d) Candidates having National Level Scholarships
   e) Registration of MoRTH officials under Civil Engineering Department.
   f) Registration of NMCG officials under Civil Engineering Department.
   g) Registration sponsored category through national Academy of Ayurveda, Ministry of Ayush.
   h) Outstanding candidates from Premier Institutions:
      i) Applicants who have qualifying degree from IITs with CPI of 8.00 or above (on a 10.0 point scale) will also be admitted under advertise seats of Teaching Assistantship (TA) of the concerned Department/School.
      ii) Interview should be conducted for this type of candidates PRIOR to the conduct of Interview for remaining candidates;
      iii) Any candidate who could not qualify in the said Interview, through this channel, is eligible to take regular selection procedure of Written Test. Since, the candidate has been interviewed once, he/she will not appear again in the interview and marks of the first interview will be considered for preparing merit list.
3. Further, if qualifying marks are specified in written test/interview a 5% relaxation will be given to SC/ST candidate. If a candidate avails such relaxation, **he/she shall not be considered for admission in general category.**
4. Upon approval of Chairman, Senate, the Head of the Department/Coordinator of the School concerned will issue admission letters to the candidates who will be required to accept the offer of admission by depositing the prescribed fee before a specified date.

5. In case a candidate does not accept the offer by paying the prescribed fee by the specified date, the offer of admission will stand withdrawn, and the admission will be offered to the candidates in the waiting list, if any, in order of merit.

3.A RESERVATIONS TO SC/ST/OBC/EWS CANDIDATES:

In each discipline, 15% seats are reserved for SC, 7.5% seats for ST, 27% seats for OBC (non creamy layer) and 10% seats for EWS candidates. SC/ST/OBC candidates must also satisfy the eligibility requirements for admission. However, while considering their cases, only suitability for the programme is ensured and the SC/ST/OBC/EWS candidates are not compared with those belonging to other categories.

Further, a relaxation of 5% marks or 0.5 CPI (on a 10 point scale) shall be admissible on the marks obtained in qualifying degree for SC and ST candidates in the admission.

The SC/ST/OBC/EWS certificates must be produced at the time of written test / interview on the prescribed form. In case of OBC (non-creamy layer) & Economically Weaker Section (EWS) the certificate should not be dated prior to six months **from 1st July, 2025**. The following authorities are empowered to issue the SC/ST/OBC/EWS certificate:

(a) District Magistrate/ Additional District Magistrate/ Collector/ Deputy Commissioner/ Addl. Deputy Commissioner/ Deputy Collector/ First Class Stipendiary Magistrate/ City Magistrate/ Sub-Divisional Magistrate/ Taluka Magistrate/ Executive Magistrate/ Extra Assistant Commissioner.
(b) Chief Presidency Magistrate/ Additional Chief Presidency Magistrate/ Presidency Magistrate.
(c) Revenue Officer not below the rank of Tehsildar.
(d) Sub-Divisional Officer of the area where the candidate and/or his family normally resides.
(e) Administrator/ Secretary to the Administrator/ Development Officer (Lakshadweep Islands).

3.B RESERVATIONS TO PHYSICALLY CHALLENGED (PC) CANDIDATES

In total, 5% reservation (horizontal) shall apply for candidates with physical disability as per Govt. of India norms (minimum 40% disability; attested copy of the certificate from District CMO must be furnished). Such candidates must satisfy the eligibility requirements for admission. However, while considering these applications, only suitability for the programme is ensured and they are not compared with those belonging to other categories. The candidates called for counseling may also be examined by a Medical Board constituted by the Indian Institute of Technology (BHU).

4. ADMISSION OF FOREIGN NATIONALS

Admissions to Ph.D. Programmes are available for Indian nationals residing abroad (INRA) and foreign nationals as per details given below.

1. Indian Nationals Residing Abroad (INRA): Candidates must have been residing abroad continuously for at least one year at the time of applying for admission. Their applications may be processed by the departments/schools as and when they are received or according to any schedule convenient to the departments/schools. The applications should be scrutinized to make sure that, in terms of qualifications; they are comparable with the candidates admitted in the general category.
2. The applications of foreign nationals, who are sponsored by the Indian Council of Cultural Relations (ICCR), will be scrutinized by the departments/schools concerned to assess their suitability for admission to the programme. The recommendations of the Department/School will be sent to the Chairman, Senate through the Dean (Academic Affairs) for approval.
3. Candidates belonging to the above two categories should satisfy the eligibility conditions and should have qualified GRE/TOFEL/IELTS/or any other equivalent examination**.**

Note: 1. Mere fulfillment of eligibility criteria does not guarantee admission in a programme. The candidates' performance in the written test and interview should be at the levels expected for the respective programmes.
2. Further details on Ph.D. programme is available on the official website www.iitbhu.ac.in.
3. Hostel accommodation will be provided subject to availability of rooms in hostels.
4. HRA will not be provided.

Annexure-I

Table 1A : Departments/Schools/Disciplines and Allied Disciplines for Ph.D. Programmes.

Most of the Bachelor's and Master's degrees that are being awarded in the disciplines in the country and abroad are listed in the following. However, a candidate possessing degree(s) that do not exactly conform to the degree(s) listed below may be considered for admission, based on the performance in written test / interview and provided that the interview / admission committee (DPGC), upon scrutiny of the list of courses done and credits earned by the candidate, finds that the degree concerned is at par with those listed below.

Departments/ Schools offering the Programme	Discipline	Allied Disciplines
Department of Architecture, Planning and Design	Architecture, Planning and Design	B.Tech.(Civil) with M.Tech. (Civil or Equivalent).
Department of Ceramic Engineering	Ceramic Engineering	(i) Bachelor's/ Master's degree of Engineering in Ceramics/ Electronics/Electrical/ Mechanical/ Metallurgical/ Chemical Engg. & Tech./ Materials Science & Technology/ Silicate Technology/ Nano Technology/ Bio Medical/ Bio Chemical/ Bio Technology. (ii) Master's Degree of Materials Science/Chemistry/Applied Chemistry/Bio Chemistry/ Physics/ Applied Physics/ Nano Science/ Medical Science/ Materials Engg.
Department of Chemical Engineering & Technology	Chemical Engineering	(i) BE/B.Tech. or equivalent degree in any branch of Engineering/ Technology with GATE Score. (ii) ME/M.Tech. or equivalent degree in any branch of Engineering/ Technology. (iii) Master degree in Physics/Chemistry/Biochemistry/ Mathematics/ Statistics/ Botany/ Zoology/ Environmental Science/ Biotechnology/ Industrial Chemistry/ Microbiology/ Nanotechnology/ Computer Science/ Materials Science with GATE or CSIR/UGC-NET-JRF or DBT-JRF or ICMR-JRF or DST-INSPIRE fellowship. (iv) Nano Science/Computer Science/ Materials Science in M.Sc. Level with GATE or CSIR/UGC-NET-JRF
Department of Civil Engineering	Civil Engineering	**Environmental Engineering** Bachelor's degree (B.Tech./B.E.) in Civil Engg. ME/M.Tech. in Chemical/ Environmental/ Biotechnology/ Remote Sensing/Climate Change/ Agricultural Engineering. **Geotechnical Engineering** Bachelor's degree (B.Tech./B.E.) in Civil Engg. AND Master's degree in Geotechnical Engineering. **Structural Engineering** Bachelor's degree (B.Tech./B.E.) in Civil/ Construction Technology and Management/Aerospace Engineering/B.Arch. AND Master's degree in Structural/ Applied Mechanics/ Construction Technology and Management/ Aerospace Structures Engg./ Naval Architecture OR Master's degree in Urban Planning/ Disaster Mitigation/ M.Arch.

Departments/ Schools offering the Programme	Discipline	Allied Disciplines
		Hydraulic and Water Resources Engineering Bachelor's degree (B.Tech./B.E.) in Civil/ Water Resources/ Agriculture Engg. AND Master's degree (M.Tech./ME) in Hydraulics/ Hydrology/ Water Resources Management/ Environmental/ Remote Sensing and GIS/ Hydro-geology/ Agricultural Engineering. **Transportation Engineering** Bachelor's degree (B.Tech./B.E.) in Civil Engg./ B.Arch. AND Master's degree (M.Tech./M.E.) in Transportation/ Highway Engineering OR Master's Degree in Urban Transportation/ Transportation Planning/ M. Planning/M.Arch. **Geoinformatics** Bachelor's degree (B.Tech./B.E.) in Civil Engg./ Geomatics/B.Arch. AND Master's degree (M.Tech./M.E.) in Geo-Informatics/ Remote Sensing/Geomatics (or allied) Engineering OR Master's Degree in Urban Planning/Disaster Mitigation/M.Arch. **Geo-Science** Bachelor's degree (B.Tech./B.E.) in Civil Engg. Master's degree (M.Tech./M.E.) in Geo-Sciences/ M.Tech. in Geology/Rock Mechanics M.Sc./M.Sc.(Tech.)/M.Tech. in Geology/Rock Mechanics.
Department of Computer Science & Engineering	Computer Science & Engineering	B.Tech./B.E./M.Tech./M.E. degree in Computer Technology/ Information Technology/ Electronics and Communication Engineering/ Data Science and Artificial Intelligence (DA)/All related subjects of Computer Engineering at M.Tech. level/ M.Tech. in Mathematics and Computing.
Department of Electrical Engineering	Electrical Engineering	B.Tech. & M.Tech. in Electronics Engineering.
	Systems Engineering	Bachelor's and Master's Degree in any Branch of Engineering or Bachelor's Degree in any Branch of Engineering.
Department of Electronics Engineering	Electronics Engineering	Master's degree in any of the following areas: Digital Communication Systems, Information and Coding Theory, Telecom Networks, Mobile and Wireless Communication Systems, Digital Systems and Microprocessors, Digital Signal and Image Processing, Computer Vision and Robotics, Signal and Systems Theory, Control Systems, Fuzzy Logic, Neural Networks and their applications, Power Electronics, Microelectronics and VLSI Systems, Semiconductor Device Modelling and Simulation, Solid State Devices, Organic Electronics, Transparent Semiconductors and Photovoltaics, Sensors and Pattern Recognition, Electronic Instrumentation and Virtual Instrumentation, Electromagnetics, RF Engineering and Microwaves, Antennas, Optoelectronics and Optical Communication, Photonic Networks and Systems, Information Technology.
	Visvesvaraya Scheme	

Departments/ Schools offering the Programme	Discipline	Allied Disciplines
Department of Humanistic Studies	Humanities and Social Sciences	Master's/Bachelor's degree in any Engineering discipline; Master's degree in any Science discipline; 4-year – Bachelor's Science degree.
Department of Mechanical Engineering	Mechanical Engineering	M.Sc./M.S. in Physical Sciences with background appropriate to Thermal & Fluid / Machine Design/Production. OR Bachelor's/Master's degree in any branch of Engineering related to the Thermal & Fluid/Machine Design/ Production and Manufacturing area.
	Industrial Management	Bachelor's degree in any branch of Engineering and Master's degree in any branch of Engineering/ Management. OR Bachelor's degree in any discipline and MBA in Operations Management, Business Analytics, or Finance of related allied discipline with valid NET-JRF or any national level scholarship. OR Bachelor's degree in any discipline and Master's degree in Computer Science, Mathematics, Statistics, Decision Sciences, Ergonomics or human factors with valid NET-JRF or any national level scholarship.
Department of Metallurgical Engineering	Metallurgical Engineering	Bachelor's / Master's degree in Mechanical / Chemical / Production Engg./Manufacturing Engg./Mineral Engg./ Ceramic Engg. Master's degree in Materials Science / Engg./ Technology Master's degree in Physical Sciences (Solid State Physics)/Chemical Sciences (Inorganic / Physical Chemistry/ Industrial Chemistry)/ Biological Sciences/Geology with Mathematics as a subject at Bachelor's level.
Department of Mining Engineering	Mining Engineering	Master's degree in Geology/Geophysics/Geohydrology Mathematics/ Petroleum Geosciences /Chemistry/ Environmental Science/Materials Science/Botany/ Zoology/Polymer Science/ Computer Science Master's degree in Chemical Engg. / Environmental Engg. /Civil Engg./Industrial Engg./Mechanical Engg./Electrical Engg./ Computer Engg./Electronics Engg./Polymer Engg. or Technology/ Ceramic Engg./Materials Engg./Information Technology
Department of Pharmaceutical Engineering and Technology	Pharmacy	MS/M.Pharm./M.Tech. in Pharmacy/Pharmaceutical Sciences/ Pharmaceutical Engg./Pharmaceutical Technology/ Pharmaceutical Biotechnology/ Bioinformatics/ Biochemical Engineering/ Biomedical Engg. with graduation in Pharmacy (B.Pharm./B.Tech.).
Department of Physics	Physics	M.Sc./M.Tech. in Applied Physics, Engineering Physics, Bio-Physics, Electronics Engg., Materials Science, Ceramic Engg., Metallurgical Engg., Electrical Engg., Bio-Informatics, Geomatics and Geoinformatics, Computer Science, Computer Engg., Mechanical Engg., Mathematics, Chemistry, Remote Sensing, Astrophysics, Space Physics, Applied Optics, Atmospheric Physics, Fibre Optics & Photonics, Nanotechnology and Biotechnology.
Department of Chemistry	Chemistry	M.Sc./M.Tech. in Microbiology/ Chemistry/ Industrial Chemistry/ Applied Chemistry/ Biochemistry/ Biotechnology/ Medicinal

Departments/ Schools offering the Programme	Discipline	Allied Disciplines
		Chemistry/ Materials Science & Technology/ Environmental Science/ Nano Technology and Physics & Energy Science with chemistry as a subject at Bachelor Level. BAMS and BSMS (Ayurveda and Siddha Medicine)
Department of Mathematical Sciences	Mathematical Sciences	Master's degree in Statistics/ Computer Science/ Computer Engineering, with Mathematics as a subject at Bachelor's level. Bachelor's degree (B.Tech./B.E.) in Mathematics and Computing/ Computer Engineering/Computer Science.
School of Biochemical Engineering	Biochemical Engineering	**Master's degree in** Biotechnology#, Microbiology#, Biochemistry, Bioinformatics, Biomedical Sciences/ Tech./Engg., Chemistry#, Food Sciences/Tech., Molecular Biology, Genetic Engineering, Human Genetics, Nanotechnology, Material Science and Environmental Sciences/Tech. **Bachelor's/Master's degree** in Biochemical Engineering, Biotechnology#, Bioinformatics, Chemical Engg./Tech., Food Tech.//Engg., Pharmacy, Biomedical Engg./Tech., Bioelectronics, Biomedical Tech./Engg., Environmental Engg./Tech., Nanotechnology, Material Science. #with all specializations
School of Biomedical Engineering	Biomedical Engineering	B.Tech./M.Tech. degree in Bioengineering/ Biomedical/Electrical Engg./Electronics Engg./ Instrumentation Engg./Mechanical Engg./ Computer Engg./Materials Science and Technology/ Chemical Engg./ Biotechnology/ Nanotechnology. M.Pharm./M.Sc./M.Tech. in Pharmacy. M.Sc./M.Tech. in Statistics, Mathematics. M.Sc. degree in Physics/Chemistry/ Polymer Sciences/ Biochemistry/Life Sciences/ Biotechnology. BDS/MBBS.
School of Materials Science & Technology	Materials Science & Technology	Master's degree in Chemical Sciences, Materials Science and Physical Sciences. Bachelor's / Master's degree in Ceramic/ Chemical/ Civil/ Electrical/ Electronics/ Mechanical / Metallurgical/ Polymer Engineering/ Plastic Technology/ Materials Technology/ Nanotechnology. Master's degree in Dentistry/ Orthopedics/ E.N.T./ Rasa Shastra.
Department of Computer Science & Engineering*	Jay Chaudhry Software Innovation Centre	M.Sc./B.E./B.Tech./M.E./M.Tech. in any branch.

* 4 Seats under Project "Jay Chaudhry Software Innovation Centre" in Computer Science and Engineering Department.

Table 1B : Discipline-wise Research Areas for Ph.D. Programmes.

The discipline-wise the Research Areas in the Ph.D. programmes for the session 2025-26 are listed below.

Disciplines	Research Areas
Ceramic Engineering	Bio-Ceramics, Ceramic/Metal/Polymer matrix composites, Electro Ceramics, Glass and Glass Ceramics, Refractories, Advanced Ceramics, Nano Technology, Cement & Concrete Technology, Energy Materials.
Chemical Engineering	To be announced at the time of Interview
Civil Engineering	Structural Engineering; Hydraulics and Water Resources Engineering; Environmental Engineering; Geotechnical Engineering; Transportation Engineering; Geo-informatics; Geology.
Computer Science & Engineering	Social Network Analysis, HPC, Machine Vision, Natural Language Processing, Information Extraction, Data Mining, Image Processing, Pattern Recognition.
Electrical Engineering	Electrical machines & Drives; Power Electronics; Control Systems; Power Systems
Systems Engineering	Systems Engineering
Electronics Engineering	RF and Microwave Engineering; Communication System Engineering; Microelectronics; Digital Systems Engineering; VLSI Architecture & Chip Design
Humanities and Social Sciences	Literary Theory, Cultural Studies, Film Studies, Marginal Literatures, Childhood, Masculinity Studies, Syntax, Linguistic Landscape Study, Comparative Grammar, Sociology and Social Anthropology in India, Physical Education and Allied Areas, Group Behaviour, Identity, Mobilization, Crowd Behaviour, Linear Semantics and Morphosyntax, Cognitive Psychology, Neuroimaging, Stress and Emotion, National Identity, Lived Religion, Festival Studies, Peace and Violence, Women's History in India, History of Education in India (indigenous v/s Modern Education, Women and education in India), Manuscript Cultures/Tradition in India (Historical and Anthropological Perspectives). Sanskrit Computational Linguistics, Natural Language Processing, Machine Translation, Indian Knowledge System, Cognitive Linguistics, Language Education, Medical and Health Humanities, Film Studies, Sociolinguistics, Language and Culture, Environmental Studies including Sanitation & Human Health, Waste Management, Climate change adaptation & livelihood, Applied geography. **Note:** **1. Students with NET/GATE/FPAT applying for Institute Assistantship (IA) cannot opt for the research areas underlined.** 2. **Students with JRF and other fellowships can apply for all of the above research areas, including those underlined.**
Mechanical Engineering	a) **Machine Design:** Fracture behavior of fibre composite through thickness, Mechanical behavior of biocomposites; Composites, Impact and failure mechanisms, Computational Fracture Mechanics, Transient Dynamics; Nuclear graphite and Fracture Characterization; Biomechanics, Cardiovascular stent design; Tiobology; Fracture Mechanics; Composite Materials such metal matrix composite, hybrid composite and nano composite for the mechanical and tribological applications; Fatigue wear modeling, contact modeling and its relevance to wear, Reliability of MEMS Devices. b) **Production Engg.**: Additive manufacturing, unconventional manufacturing, Incremental Forming & Manufacturing, Metal firming, Manufacturing automation using: CAD/CAM/CAE/CE/Reverse Engg.; Tool wear condition monitoring; Materials aspect of Triobology, Composite Materials and Laser Surface Texturing; Weld metal characteristics, Thermal effects on weld metal properties, stress removal in casting.

Disciplines	Research Areas
	c) **Thermal and Fluid:** Thermal behavior of Fibre Composite Materials; Solar Thermal, Alternate Fuel, Hybrid System; Engine Simulation; Multi-phase flows related to Molten Metal-Gas interaction, Hydro and Gas cyclones, Droplet/Bubble dynamics; Atomization – Pressure assisted, Electrohydrodynamic; Aerosol generation and measurement; Particle Image Velocimetry; Heat and Mass Transfer Analysis of Grains during fludized bed drying for achieving energy economy and higher quality; Influence of Climate Change for the Specification of Design Wind Speed of Engineering Structure, Gasification based Polygeneration Cycle of Biomass for Hydrogen Production; Numerical and Experimental analysis of pulverized coal and biomass combustion.
Industrial Management	Operations Management, SCM, Production System
Metallurgical Engineering	Microstructural, Structural and Chemical Characterization; Mechanical Behavior, Deformation Processing and Failure Analysis; Phase Equilibria and Phase Transformation; Non-Equilibrium Processing of Advanced Materials; Ultra-Fine Grained and Nano-Structured Material; Metallurgical and E-Waste Utilization; Design and Development of Advanced Steels; Tribology and Surface Engineering' Thermodynamics and Kinetics of Metallurgical Processes' Advanced Structural and Functional Materials.
Mining Engineering	To be announced at the time of Interview
Pharmacy	Pharmaceutics, Pharmaceutical Chemistry, Pharmacology, Pharmacognosy.
Physics	Experimental Condensed Matter and Materials Physics, Quantum Many-Body and Information Theory, Solar and Space Physics, Nuclear and High Energy Physics.
Chemistry	Synthetic Chemistry, Environmental Chemistry, Surface Chemistry, Computational Chemistry.
Mathematical Sciences	Fluid Dynamics (Atmospheric Vortex Dynamics Modelling), Biomechanics, Functional Analysis and Wavelets, Rind & Module Theory, Computational Mathematics, Stochastic Modeling and Queuening Theory (Probability +ML) Number Theory, Spectral Geometry, Spectral Graph Theory, Analysis on Manifolds, Computation Fluid Dynamics, Hydrodynamics Stability Analysis, Topological Data Analysis, Algebra, Functional Analysis, Algebraic Geometry, Toric Variety Vector Bundle.
Biochemical Engineering	All areas of Biochemical Engineering.
Biomedical Engineering	Physiology; Electrophysiology & Neuro Biology; Polymer in Medicine; Bioinstrumentation, Biomedical Signal & Image Processing; Modeling of Biological System, Biological Control System Analysis; Biomechanics; Tissue Engineering & Micro fluidics; Molecular Biology, Biochemistry, Biotechnology & Nano Medicine; Optical Nanomaterial, Biosending, Image Theuranostics. (1) Artificial Intelligence and its application to Biomedical Signal & Image Processing. (2) Bioinstrumentation. (3) Brain Computer Interface (4) Rehabilitation Engineering. (5) Computational Neuroscience. (6) Neuroinformatics. (7) Biomedical Signal Processing.
Materials Science & Technology	Physical and Chemical Sciences, ~~Engineering Sciences,~~ Materials Science and Engineering, Metallurgical Engineering, Mechanical Engineering, Electronics Engineering, Polymer Science and Engineering, Nanoscience and Nanotechnology
Jay Chaudhry Software Innovation Centre*	Software Development, Quantum Computing, Cybersecurity, IoT, and Data Analytics.
Visvesvaraya Scheme**	Microelectronics and VLSI

* 4 Seats under Project "Jay Chaudhry Software Innovation Centre" in Computer Science and Engineering Department.

** 2 Seats (One full time and one part time) under "Visvesvaraya Scheme" in Electronics Engineering Department.

Table 1C: Total Number Institute Assistantship available in the departments/schools in Even Semester 2025-26

Discipline	Total Number of Available Assistantship
Architecture, Planning and Design	09
Biochemical Engineering	14
Biomedical Engineering	06
Ceramic Engineering	19
Chemical Engineering	26
Chemistry	08
Civil Engineering	35
Computer Science & Engineering	28
Electrical Engineering	21
Electronics Engineering	25
Humanities & Social Sciences	16
Industrial Management	06
Materials Science & Technology	12
Mathematical Sciences	11
Mechanical Engineering	40
Metallurgical Engineering	36
Mining Engineering	20
Pharmaceutical Engineering & Technology	15
Physics	11
Systems Engineering	09

Note:

A) **Chemistry:** (Physical Chemistry – 2, Inorganic Chemistry – 3 & Organic Chemistry – 3);

B) 04 Seats (supernumerary) offers under Project "Jay Chaudhry Software Innovation Centre" in Computer Science and Engineering Department

C) 02 supernumerary seats (one full time and one part-time) offers under Vishvesvaraya Scheme in Electronics Engineering Department.

D) 02 seats (supernumerary) offers for MoRTH under Civil Engineering Department (topic mentioned on page no. 5)

E) The number of available Institute Assistantship should not be considered as available seats. Applicants who are either of sponsored category or who are already awarded fellowship by external agencies can submit their applications for admission in departments/schools even if there are no Institute Assistantship available.

Annexure-II

LIST OF R & D ORGANIZATIONS RECOGNIZED BY THE INSTITUTE FOR EXTERNAL REGISTRATION

1. All R & D Laboratories/Institutions of CSIR, DAE, DOS, DRDO, DST and Ministry of Telecommunication & Information Technology.
2. Bharat Heavy Electricals Limited (BHEL), Research and Development Laboratories.
3. Central Indian Pharmacopoeia Laboratory, Ghaziabad.
4. Central Mine Planning and Design Institute Limited, Ranchi.
5. Central Power Research Institute, Bangalore.
6. Central Pulp and Paper Research Institute, Saharanpur.
7. Banaras Locomotive Works (BLW), Varanasi
8. Hindustan Aeronautics Limited, Lucknow & Korwa.
9. Hindustan Machine Tools (R & D Division), Bangalore.
10. Indian Bureau of Mines, Nagpur.
11. Jyoti Limited, Baroda.
12. Kirloskar Electric Limited, Bangalore.
13. Mechanical Engineering Research and Development Organization, Pune.
14. National Institute of Rock Mechanics, Kolar.
15. National Council for Cement and Building Materials (NCCBM), New Delhi.
16. Raman Research Institute, Bangalore.
17. Tata Steel, Jamshedpur.
18. National Metallurgical Laboratory Extension Centre, Chennai.
19. Nothern Coalfields Limited, Singrauli
20. Research Designs and Standards Organization (RDSO), Lucknow
21. JSW Steel Limited.
22. Coal India Limited with all subsidiaries.
23. Singareni Collieries Company Limited.
24. Hindustan Copper Limited.
25. National Mineral Development Corporation.
26. Neyveli Lignite Corporation India Limited.
27. Steel Authority of India Limited.
28. National Thermal Power Corporation.
29. National Aluminum Company Limited.
30. Directorate of General and Mines Safety.
31. Gujrat Mineral Development Corporation Limited.
32. Tata Elxsi – Quantum Computing & AI, Bangaluru.
33. Center for Development of Telematics (C-DOT) – Next-Generation Communication & AI, Bangaluru (Karnataka)
34. Society for Applied Microwave Electronics Engineering & Research (SAMEER) – 6G & Semiconductor Research, Mumbai.
35. Tabor Electronics Ltd.– Advanced Signal Processing & RF Technologies, Ahmedabad.
36. S-Qube Systems – Quantum Radar and Integrated Sensing.
37. QNu Labs – Quantum Cryptography & Secure Communication.
38. BosonQ Psi – Quantum Computing Applications.
39. QpiAI – AI & Quantum Machine Learning.
40. Tata Quantum – Quantum Technologies for Defense & Communication.
41. Synery Quantum India – Quantum Communication & Sensing.