

Indian Institute of Technology Kharagpur



Information Brochure Ph.D Admission 2023-24 (Autumn Semester)

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I. GENERAL

1. Important Guidelines for Ph.D Application

Applications are invited for admission to the Ph.D Programme [Regular with Institute Assistantship, Individual Fellowship (i.e. CSIR/UGC/DBT/ICMR/INSPIRE etc.), Sponsored, and Working Professionals] of the Institute in all disciplines of Engineering, Technology, Science, Architecture & Regional Planning, Humanities & Social Sciences, Rural Development, Law, Management and Medicine. Admission of reserved-category candidates will be done as per Government of India notification.

Candidates should read carefully the eligibility criteria as available in the Information Brochure before applying for the programme. Since all the applications will be screened/shortlisted on the basis of data submitted by the candidates in the “online application form”, the candidates must satisfy themselves of the suitability for the programme to which they are applying. If at any stage, it is found that candidates have furnished false or wrong data/information, their candidature/admission will be rejected/cancelled.

Application once submitted successfully cannot be altered/resubmitted under any circumstances. Further, no request with respect to making changes in any data/particulars entered by the candidate in the Online Application will be entertained. Therefore, please keep all data/information ready before you start filling up the Application Online. Please note that a candidate should submit only one application. Duplicate applications will be summarily rejected and no refund will be processed.

Applicants are required to apply online at www.iitkgp.ac.in

Application fee (Non-refundable) is Rs.1000/- for Unreserved/OBC/EWS/Transgender candidates and Rs.500/- for SC/ST/PwD/ Women candidates.

2. Important Dates:

Commencement of online application	March 01, 2023
Website closure for submission of online application	March 31, 2023
Last date for receipt of hard copy of completed application (for Ph.D through Project category only) at the Academic (PGS&R) Section	April 05, 2023
Written Test and Interview to be conducted in the respective Departments/Centres/Schools (for shortlisted candidates only)	May 02, 2023 to May 12, 2023
Date of Admission	July 14, 2023 or July 21, 2023 (Tentative)

3. Instructions to complete the Application

STEP-I : Fill in the ONLINE application form

Register with Your Email Id and Login. Fill in the appropriate data. Please note that you have to upload your testimonials wherever they are required to verify your credentials along with your digital photograph and signature.

STEP-II : Make PAYMENT and SUBMIT Application

Payment of the application fee has to be made through online payment gateway only.

STEP-III : Take a PRINTOUT

After final submission of your online application, you will be able to generate your online application printed with your specific details/data. This application printout may be retained with you for future requirement.

Please note that you NEED NOT SEND the hardcopy application by post. Your application will be considered on the basis of your final submission through online. You can check submission, short listing, selection and other application related status from Application Status menu. You should remember your login id and password for the same.

N.B. The candidates shortlisted for final interview will be informed through system generated email only. Their names may be notified on the webpage. However, candidates can see their status on the web portal by login and can download the Written Test/Interview letter, if shortlisted.

For any queries related to Ph.D admission, you can send an email to asregpgr@adm.iitkgp.ac.in or contact the respective departments.

II. THE INSTITUTE

Indian Institutes of Technology (IITs) were established to cater to the country's growing need for trained manpower with higher learning in science and technology. The Indian Institute of Technology Kharagpur, first of the chain of IITs, was established in 1951 in the idyllic and sylvan settings at Hijli in West Bengal. From a modest start in the dilapidated Hijli jail building, IIT Kharagpur has grown into one of the largest and most well-known technological institutes of the country. The handsome main building with its majestic tower was inaugurated in 1956. Pandit Jawaharlal Nehru in the first convocation in the same year said "here in the place of that Hijli detention camp stands this fine monument of India, representing India's urges, India's future in the making. This picture seems to me symbolic of changes that are coming to India". In the year 2019, IIT Kharagpur has been declared an Institute of Eminence (IoE) by the Government of India.

Today, IIT Kharagpur has come a long way to its present position of pre-eminence with 19 academic departments, 15 multidisciplinary centres, School of Management, School of Telecommunications, School of Medical Science and Technology and School of Intellectual Property Law, School of Water Resources, School of Infrastructure Design and Management, School of Engineering Entrepreneurship, School of Energy Science, a School of Environmental Science and Technology, School of Nano-Science and Technology and several sophisticated central facilities. It is the largest and the most diversified among all the IITs and continuously strives to produce scientists and technologists of the highest calibre and integrity to help the nation become self-reliant in its technological needs and to provide leadership in the field of technical education and research. Some of the distinctive features of the programmes at IIT Kharagpur are science based engineering education, emphasis on complete education, continuous internal evaluation and flexibility for experimentation, upgradation and innovation in curriculum design. IIT Kharagpur has a number of distinctions to its credit among all the IITs, such as the first Master's programme on Management, first Master's Programme on Medical Science and Technology for practicing Medical Doctors etc.

i. LIBRARY

Central Library, IIT Kharagpur is one of the largest libraries in science, technology, medical science and management in Asia, having an excellent collection of over 3.8 lakh documents, and subscribing to 1250 print journals, 40000 e-books, and providing online full-text access to 10000 e-journals of the major publishers like Elsevier, Science, Springer, IEEE, IEE, ACM, ASME, ADCE etc. Beside that the Central Library also provides access to major bibliographical databases like Compendex, INSPEC, SciFinder, Scholar, Web of Science, Scopus and MathScience Net. All regular library services have been automated using library software package "LibSys". Central Library has an excellent digital library section to facilitate seamless access to various subscribed IINDEST-AICTE Consortium e-resources as well as provide access to Institutional Repository Server, installed for faculty, research scholars and others to post their intellectual output. The library has installed CCTV cameras in each of the reading halls and at strategic locations of Central Library buildings for auto-surveillance and security. Recently, 5000 selected text books have been made RFID enabled through an RFID pilot project sponsored by MHRD. The Central Library has access to all Springer e-books published during the years 2005 to 2013 and CRCnetBASE e-books published during the years 2004 to 2013. For details please visit: <https://library.iitkgp.ac.in>

ii. TECHNOLOGY STUDENTS' GYMKHANA

The concept of the Technology Students' Gymkhana as a forum of Sports and Games, Social and Cultural and Technology activities, in which the students, the faculty, staff and their families can take

deep interest is unique, and was introduced at IIT Kharagpur for the first time way back in the fifties. The Technology Students' Gymkhana is an organization for fostering and developing extra-curricular activities among the students. Through sports, games and cultural activities it helps to cultivate the spirit of constructive co-operation, leadership qualities and organizational abilities among the students. The Gymkhana is the nerve-centre of this residential campus and has enriched the quality of student life. Gymkhana has a large number of facilities that include a well-equipped modern Gymnasium, a standard swimming pool and two stadia, namely, Jnan Ghosh Stadium and Tata Sports Complex. Besides these, there are also floodlit Basketball, Volleyball and Tennis Courts. Club activities are also encouraged where students can display and develop their talents in various fields, e.g. photography, dramatics, social service, Yoga, etc. The Gymkhana also organizes annual social and cultural festival "Spring Festival", and Techo-Management festival "Kshitij", which are considered to be the largest of their kind in Asia in terms of student participation.

iii. ACCOMMODATION AND AMENITIES

The Institute is residential. Students are accommodated in 22 Halls of Residence, 14 for boys and 06 for girls and 02 with family accommodation for the Research Scholars/ Defence Personnel (M. Tech.). The halls have 24-hour internet connectivity. However due to the paucity of accommodation in the hostels, Research Scholars who are offered admission may have to stay outside the campus or share the accommodation on campus during their initial months until they get a suitable accommodation on the campus.

All the Halls of Residence also have regular catering facilities. Some additional food outlets are also located within the campus; a few late evening canteens are available as well in some of the Halls of Residence. Several restaurants including few air-conditioned ones are located in the campus, mainly in the hostel area. For daily necessities and groceries, one can walk down to the Technology Market (Tech. Market) within the Campus. A larger market, Gole bazar, is about 5 kms. and Bigbazar is about 6 kms. from the Campus. Three banks with ATM facility are located inside the Campus. The State Bank of India branch with core banking services is in the campus close to the Institute Main building and it provides foreign exchange facilities as well. An extension counter of Syndicate Bank is situated near the Institute main building. A branch of Punjab National Bank is situated in the Tech. Market where business transactions are carried out in the afternoon. In addition, an Axis Bank ATM is available inside the Gymkhana premises. A Post Office is located close to the State Bank of India branch. Outlets of a few courier services are also available within the campus. South Eastern Railway has been operating a reservation counter in the Institute Main Building area extending Railway ticket booking facilities, especially to the students and the campus residents. There are also a few privately run outlets in the campus to provide services for railway ticket booking, air ticket booking, car rental and STD / ISD phone calls. For details please visit: <http://www.iitkgp.ac.in/hall-management-centre>

iv. RECREATIONAL/EXTRA-CURRICULAR ACTIVITIES

IIT Kharagpur aims at the all-round development of personality, with emphasis on physical, socio-cultural and value-oriented education. In the rich tapestry of culture that is the hallmark of this IIT, students play a vital role. They are an integral part of almost all decision-making bodies of the Institute, starting from hostel administration to Senate. They organize cultural and techno-management activities throughout the year, culminating in the Spring Fest and Kshitij. Technology Students' Gymkhana, the nerve centre for sports, cultural and social activities. It helps to cultivate the spirit of constructive co-operation, leadership qualities and organizational abilities among the students. It has a number of outdoor and indoor stadia for sports and games, a modern swimming

pool and a gymnasium. Photography Club, Fine Arts Club, Publicity Club, Music Club, Yoga Club, Film Society, Dramatics Society, Aquatics Society, Astronomy Club and many more special interest groups are supported by the Gymkhana. Lately a large number of technology and social service focused student societies have been formed, quite often as local chapters of reputed international bodies or societies. The halls of residence also offer a few in-house sports facilities in addition to the central facilities.

v. HEALTH CARE

The B. C. Roy Technology Hospital is located at the center of the Campus. It provides indoor and outdoor medical facilities for common ailments. However, a few specialized visiting medical practitioners regularly attend the outdoor chambers. The Hospital has its round the clock emergency medical attendance arrangement, and a 24x7 medicine counter. Complicated cases are referred for treatment to the State Hospital or to the Railway Hospital or to Hospitals in Kolkata. The Institute has Students' Medical Insurance Coverage which is obligatory on the part of the students and which usually covers a part of medical expenses for such referred cases. 24 hours Institute ambulance service is also available for the purpose of shifting the patients to other hospitals for better management. A few specialized medical practitioners are also available around the IIT campus for private consultation; this list of neighbourhood medical facilities is posted at <http://noticeboard.iitkgp.ac.in/hospi.htm>.

vi. COUNSELLING CENTRE

The Counselling Centre offers a broad range of services including psychological assessment, individual therapy, group therapy, as well as medication and management to promote mental health, life skills training, emotional resilience and overall wellbeing of the student community. Full-time clinical psychologists and a visiting psychiatrist are available for consultation. The centre has also initiated an outreach program that involves building up a team of sensitized wing representatives from each Hall of Residence to help reach students in need. For details please visit: <http://www.counsellingcentre.iitkgp.ac.in>

III. Ph.D PROGRAMME

1. Programme

The Institute provides facilities for research leading to the Degree of Doctor of Philosophy (Ph.D).

The award of the Ph.D degree is made on the basis of satisfactory performance of a registered candidate in

- i. Prescribed course work, comprehensive examination & seminar
- ii. Publication of original research work in reputed journals/conferences or award of patents/technology transfer etc.
- iii. The thesis submitted by the candidate and a final viva voce. The thesis shall be the report of research work characterized by either discovery of new facts or a new interpretation of known facts and theory, or an independent design and development, or development of new instrument/technology

2. Research Areas:

Areas of research available in the different departments/centres/schools are listed on website, at link given against each Department/Centre/School in below table.

A. Department	URL
Aerospace Engineering	http://www.iitkgp.ac.in/department/AE
Agricultural and Food Engineering	http://www.iitkgp.ac.in/department/AG
Architecture and Regional Planning	http://www.iitkgp.ac.in/department/AR
Biotechnology	http://www.iitkgp.ac.in/department/BT
Chemical Engineering	http://www.iitkgp.ac.in/department/CH
Chemistry	http://www.iitkgp.ac.in/department/CY
Civil Engineering	http://www.iitkgp.ac.in/department/CE
Computer Science and Engineering	http://www.iitkgp.ac.in/department/CS
Electrical Engineering	http://www.iitkgp.ac.in/department/EE
Electronics and Electrical Communication Engineering	http://www.iitkgp.ac.in/department/EC
Geology and Geophysics	http://www.iitkgp.ac.in/department/GG
Humanities and Social Sciences	http://www.iitkgp.ac.in/department/HS
Industrial and Systems Engineering	http://www.iitkgp.ac.in/department/IM
Mathematics	http://www.iitkgp.ac.in/department/MA
Mechanical Engineering	http://www.iitkgp.ac.in/department/ME
Metallurgical and Materials Engineering	http://www.iitkgp.ac.in/department/MT
Mining Engineering	http://www.iitkgp.ac.in/department/MI
Ocean Engineering and Naval Architecture	http://www.iitkgp.ac.in/department/NA
Physics	http://www.iitkgp.ac.in/department/PH
B. Centre	URL
Centre of Excellence in Artificial Intelligence	http://www.iitkgp.ac.in/department/AI
Advanced Technology Development	http://www.iitkgp.ac.in/department/AT
Centre for Oceans, Rivers, Atmosphere and Land Science	http://www.iitkgp.ac.in/department/CL
Centre for Computational and Data Sciences (CCDS)	http://www.iitkgp.ac.in/department/CD
Cryogenic Engineering	http://www.iitkgp.ac.in/department/CR
Centre of Excellence for Indian Knowledge Systems	http://www.iitkgp.ac.in/department/KS
Rekhi Centre of Excellence for the Science of Happiness	http://www.iitkgp.ac.in/department/RX
Deysarkar Centre of Excellence in Petroleum Engineering	http://www.iitkgp.ac.in/department/DE
Materials Science	http://www.iitkgp.ac.in/department/MS
Rubber Technology	http://www.iitkgp.ac.in/department/RT
Rural Development	http://www.iitkgp.ac.in/department/RD
P K Sinha Centre For Bioenergy and Renewables	http://www.iitkgp.ac.in/department/BE
Centre of Excellence on Safety Engineering & Analytics (COE-SEA)	http://www.iitkgp.ac.in/department/SE
C. School	URL
Bio Science	http://www.iitkgp.ac.in/department/BS
Energy Science and Engineering	http://www.iitkgp.ac.in/department/ES
Environmental Science and Engineering	http://www.iitkgp.ac.in/department/EF
G.S. Sanyal School of Telecommunication	http://www.iitkgp.ac.in/department/GS
Nano Science and Technology	http://www.iitkgp.ac.in/department/NT
Rajendra Mishra School of Engineering Entrepreneurship	http://www.iitkgp.ac.in/department/RJ
Rajiv Gandhi School of Intellectual Property Law	http://www.iitkgp.ac.in/department/IP
Ranbir and Chitra Gupta School of Infrastructure Design and Management	http://www.iitkgp.ac.in/department/ID
School of Medical Science and Technology	http://www.iitkgp.ac.in/department/MM
School of Water Resources	http://www.iitkgp.ac.in/department/WM
Subir Chowdhury School of Quality and Reliability	http://www.iitkgp.ac.in/department/RE
Vinod Gupta School of Management	http://www.iitkgp.ac.in/department/BM

3. Eligibility Criteria for Admission:

3.1. All candidates seeking admission to the Ph.D program under the categories mentioned below shall have to possess requisite marks/grades in the qualifying degree as shown below:

a) A minimum of 60% marks or a CGPA of 6.5 in 10 point scale in the qualifying examination (3.2.a and/or 3.2.b) in Engineering /Science /Commerce /Management/ Law and/or equivalent

OR

b) A minimum of 55% marks or a CGPA of 6.0 in 10 point scale in the qualifying examination (3.2.a and/or 3.2.b) in Humanities/Social Science/MBBS degree and/or equivalent

Note: i) Candidates appearing in the final year of qualifying degree programme whose final result is awaited is required to enter the CGPA/Marks of all other preceding semesters except the final semester for that particular programme e.g., for B.Tech programme of 8 semesters, CGPA/Marks upto the 7th semester or M.Sc./M.Tech. programme of 2 years, CGPA/Marks upto 3rd semester and so on. An application not meeting this requirement will be rejected.

ii) CGPA will not be converted into percentage marks if the degree awarding Institute provides marks in CGPA system or vice versa. Their admission will be based on the CGPA or Percentage of Marks awarded in the transcript.

3.2. a) Minimum qualifying degree required for seeking admission to the Ph.D program

- a) M.Tech (Master of Technology) / MS / ME (Master of Engineering)/ M.Sc(Engg.,)
- b) M. Arch/ MCP (Master of City planning) /MRP (Master of Regional Planning)
- c) M. Phil (2 year programme)
- d) MBA / PG Diploma in Management of 2-year duration (after completion of B.Tech/M.Sc/MA/M.Com)
- e) LL.M (2 year program) after EITHER at least 5 years of integrated LLB degree after 10+2 examination OR 3 years LLB degree after 10+2+3 examination
- f) A degree equivalent to any of the above

OR

3.2. b) Minimum qualifying degree required for seeking admission to the Ph.D program

- a) B.Tech (Bachelor of Technology)/ BE (Bachelor of Engineering)/ B.Sc (Engg.)
- b) B.Arch (Bachelor of Architecture)
- c) M.Sc. (Master of Science) / MA (Master of Arts) / M. Phil. (1 year programme)
- d) MBA / PG Diploma in Management of 2-year duration (after completion of BA/B.Sc/B.Com)
- e) MBBS degree with compulsory one-year internship
- f) 5 years (minimum) of integrated LLB degree after 10+2 examination OR 3 years LLB degree after 10+2+3 examination
- g) A degree equivalent to any of the above

3.3. Additional Requirements for admission under different categories

a) Regular with Institute Assistantship

Candidates having minimum qualifying degree as mentioned in 3.2.(b) above must possess a valid **GATE score** that is **above the cut-off level of students admitted for M.Tech/MCP admission in a particular year** or **NET qualification with Assistant Professorship** for the award of Institute Research Assistantship. For admission in Ph.D programme, the validity of NET qualification with Assistant Professorship is for three (3) years from the date of declaration of NET results.

- 1) If a person who is in employment and is applying for Institute Assistantship and is selected for admission, he/she must resign and produce the acceptance of resignation by the employer at the time of joining or produce a document that he/she is not receiving any salary from his/her employer along with proper document of sanctioned leave.
- 2) The Institute Research Assistantship shall be awarded for a maximum period of 5 years. At present the amounts are as follows:
 - Rs. 31,000/- pm for the first 2 years
 - Rs. 35,000/- pm for the next 3 years
- 3) No Research Student shall be permitted to receive any emoluments, salary, stipend or any other scholarship/assistantship during the tenure of Institute Research Assistantship.

b) Individual Fellowship (CSIR/UGC/DBT/ICAR/INSPIRE etc.)

- 1) All candidates applying for Individual Fellowship category must have **valid award letter** with fellowship issued by the respective funding agency (i.e. CSIR/UGC/ DST/DBT/ICMR etc.).
- 2) Candidates admitted under Individual Fellowship category shall not be entitled for Institute Research Assistantship.
- 3) Candidates having provisional Individual Fellowship award letter must give an undertaking that "In case of cancelation/withdrawal of Provisional award of fellowship by the funding agency, the admission at IIT Kharagpur will be cancelled from the date of joining the Ph.D programme and there is no liability on the part of IIT Kharagpur in this regard".

c) Sponsored

- 1) Persons who possess the minimum prescribed qualifications as mentioned in 3.2.(a) OR 3.2.(b) (without GATE/NET) and are in service in any of the following establishments with **Minimum of two-year job experience** shall be eligible for admission to the Ph.D program as sponsored candidates:
 - a) Defense or other ministries of the Government of India or any other government organizations;
 - b) Established industrial research and development organizations;
 - c) Autonomous bodies and public undertakings;
 - d) Universities/colleges;
 - e) Reputed industries as may be recognized by the Institute.
- 2) An intending sponsored candidate must submit his/her application in prescribed form along with No objection cum sponsorship certificate (**Appendix I**) for admission through his/her employer, who will forward the same to the Institute with suitable endorsement.

- 3) A sponsored candidate selected for admission shall be required, at the time of joining the Institute, to produce certificate in the prescribed form from the employers to the effect: (i) that he/she has been officially released from his duties for purpose of joining the program and has been granted leave for the required period; (ii) that his/her services shall be retained with the employer.
- 4) In the case of a sponsored candidate admitted as such to the Ph.D program, the minimum residential requirement is one year at a stretch subject to successful completion of the prescribed course work.
- 5) A candidate sponsored by an industry, an R&D organization, educational institution or a Government organization having adequate research facilities may be allowed to work externally subject to his/her fulfilling all such conditions prescribed in the Regulations. There is no provision of any financial assistance for sponsored candidates.

d) Ph.D through Project

- 1) **Persons who possess the minimum prescribed qualifications as mentioned in 3.2.(a) OR 3.2.(b) and are working in a sponsored project of the Institute (i.e. under the auspices of SRIC of the Institute) shall be eligible for admission to the Ph.D program under project category.**
- 2) An intending candidate must submit his/her application in the prescribed form for admission through Principal Investigator, Head of the Department/Centre/School and Dean (SRIC) with suitable endorsement.
- 3) The minimum remaining period of the project as well as the tenure of the project employee should be at least 2 years from the date of joining the Ph.D program.

3.4. B.Tech. from IITs

- 1) B.Tech degree and Dual Degree (B.Tech & M.Tech) holders having final CGPA ≥ 8.00 from Indian Institutes of Technology (IITs) will be given direct admission in Ph.D programme with Institute Research Assistantship.

3.5. Ph.D program for Working Professionals with Minimum Residential Requirements

Discipline	Minimum eligibility criteria
Engineering and Basic Sciences	B.Tech/BE/M.Sc or equivalent degree with a minimum CGPA of 7.5 on a 10 point scale or 70 % marks and with a minimum working experience of 2 years
HSS	<p><u>For candidates with more than 2 years and less than 10 years' work experience:</u> B.Tech/BE/M..Sc./MA or equivalent degree with a minimum CGPA of 7.5 on a 10 point scale or 70 % marks</p> <p><u>For candidates with equal to or more than 10 years' work experience:</u> B.Tech/BE/M..Sc./MA or equivalent degree with a minimum CGPA of 7.0 on a 10 point scale or 65% marks</p>

VGSOM	<p>For candidates with more than 2 years and less than 15 years' work experience: B.Tech/BE/M..Sc./MA/MBA or equivalent degree with a minimum CGPA of 7.5 on a 10 point scale or 70 % marks</p> <p>For candidates with equal to or more than 15 years' work experience: B.Tech/BE/M..Sc./MA/MBA or equivalent degree with a minimum CGPA of 6.5 on a 10 point scale or 60% marks</p>
SMST	<p>For candidates with MBBS degree: Minimum CGPA of 7.0 in 10 point scale or 65 % marks</p> <p>For candidates with B.Tech/BE/M.Sc: A minimum CGPA of 7.5 on a 10 point scale or 70 % marks</p>
RGSoIPL	A minimum CGPA of 6.0 on a 10 point scale or 55% marks in LLB, and with a minimum work experience of 10 years.

For all the disciplines:

- I. The candidate must meet the minimum eligibility criteria to be shortlisted for test and interview. Any conversion of CGPA to percentages of marks (or vice versa) to meet this criterion will not be permitted unless the conversion formula is explicitly mentioned in the transcripts.
- II. Candidates with higher than the minimum academic qualification will be given relaxation in the course requirement as per Institute rules.
- III. Experience: Two years of post-qualification experience (experience may include stints at multiple organizations) for candidates holding Bachelor/Master degree in relevant disciplines.
- IV. Candidates need to provide a '**NO OBJECTION**' certificate issued from their company, stating it has no issues with the candidate pursuing Ph.D under the proposed scheme: **Ph.D Program for Working Professionals with Minimum Residential Requirements**. No commitment of financial support or the continuation of their employment during or after the Ph.D is required.
- V. There is no provision of any financial assistance for Working Professionals with Minimum Residential Requirements.
- VI. Detailed guidelines are available at **Appendix- II**.

3.6. Special Notes:

- 1) Department/Centre/School may fix additional admission criteria without compromising the eligibility criteria mentioned here.
- 2) Mere fulfillment of the eligibility criteria does not guarantee admission to the Ph.D programme.
- 3) Any document will be considered as valid if that is valid on or after the date of admission.
- 4) The decision of IIT Kharagpur regarding determination of equivalent degree is final and binding to all applicants.

4. Selection and Admission:

The admission of a candidate to the Ph.D program is recommended by the Departmental Academic Committee (Post-Graduate and Research), abbreviated as DAC (PG&R), of the Department/Centre concerned on the basis of-

- a. Overall Academic Performance
- b. Written Test (Through offline mode) and
- c. Personal Interview (Through offline mode)

The academic units may shortlist the candidates for final interview based only on Overall Academic Performance or based on both Overall Academic Performance and written test/Personal Interview. However, final selection will be based on overall academic performance and performance in written test and final interview only.

5. Payment of fees and deposits:

Every Research Scholar shall be required to pay at the time of joining the following components of fees, at rates as in force for the time being:

(a) **Non-refundable**

Onetime fee:

- i. Hostel Admission, Medical Examination, Student Welfare fund, Alumni Subscription and Modernisation.

Semester Fee:

- i. Tuition fee*, Registration Fee, Examination Fee, Student Amenities, and Medical Registration.
- ii. Laboratory Fee, Hostel Seat Rent, Electricity and Water Charges etc., Mess Charges, Hall Establishment Charges, Hostel Overhead Charges.

(b) **Refundable**

- (i) Institution Caution Money
- (ii) Hall Caution Money

* 100% tuition fees waiver for SC/ST/PwD students.

* **The above fees are subjected to revision from time to time.**

6. Enrolment and course work:

A candidate is required to enrol for the Ph.D program within 1 month of joining on payment of prescribed fees and to carry out research work under a supervisor from amongst the faculty of the Institute. A Research Scholar, including a Faculty member enrolled for Ph.D programme, must have a Supervisor, even though he/she may be from exceptionally good academic background having research exposure.

All candidates enrolled for the Ph.D program are required to complete the course work as prescribed below:

- a) English for Technical Writing (compulsory)
- b) A set of subjects to be recommended by the Doctoral Scrutiny Committee (DSC) considering the student's skill requirements for the research work to be undertaken by the student and his (or her) academic background to have a credit loading as under.

- i. For students admitted on the basis of M.Tech or equivalent degree:
Lower limit: 10, Upper Limit: 20
- ii. For students admitted on the basis of M.Tech or equivalent degree, having completed their qualifying degree 8 years before the Ph.D admission:
Lower limit: 20, Upper Limit: 40.
- iii. For students admitted on the basis of B.Tech., M.Sc. or equivalent degree:
Lower Limit: 20, Upper Limit: 40.
- iv. For students admitted on the basis on B.Tech, M.Sc. or equivalent degree, having completed their qualifying degree 8 years before the admission:
Lower Limit: 40.

Candidates assigned with the course work must obtain, in the 7-scale grading system, a grade not lower than 'C' in each of the subjects. 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 a grade not lower than 'C'. Should the candidate fail to clear the course work within 1 year of enrolment, the DSC may review the performance of the student and recommend a change of course work.

In addition to the assigned course work requirement, a candidate is also required to show, before he/she submits the synopsis, proficiency in one of the subjects offered by the Department of Humanities and Social Sciences, or IEM or VGSOM as approved by the Senate.

7. Registration:

- a. A candidate is required to give a seminar talk on the topic of her/his research within three years 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 with members of the DSC and DAC (PG&R) present. 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 within the next 3 months. The registration seminar should normally be held within three (3) calendar years of enrolment of a student. Should the candidate fail to clear the registration seminar even on second attempt the enrolment shall be cancelled and the student shall be asked to leave.
- b. Registration of a candidate for the Ph.D degree shall be effective, normally, from the date of enrolment and shall remain valid for a period of 08 (eight) years. The registration of a candidate may be deferred by the DSC and DAC(PG&R) on account of unsatisfactory progress. A candidate will be required to submit the thesis before the expiry of the registration period. In the event of a candidate failing to submit his/her thesis within the period, the registration shall lapse automatically.

8. Seminar and Synopsys of Research Work:

Prior to submission of the thesis the candidate will submit the synopsis of the thesis and present a seminar to an open audience in which besides others the DSC and DAC (PG&R) members will be present. The seminar lecture will test the candidate's depth of knowledge and progress in his/her research. The candidate shall be allowed to submit his/her thesis for the Ph.D. degree only when the DSC is satisfied about the work. If the DSC is not satisfied with the quality of the work or the general preparation of the candidate, the candidate will have to appear again for the seminar within a maximum period of six months. The thesis must be submitted within one month after the DSC approves the submission on the basis of this seminar.

9. Thesis and Defence :

On successful completion of the seminar the DSC will recommend to the Senate a panel of ten experts, from India and/or abroad, to examine the thesis (not more than 5 persons in the list shall be from India). The thesis shall be forwarded to two experts from the panel who shall submit report separately on the thesis and forward their recommendation to the academic section.

Once the reports of the examiners have been accepted as satisfactory the candidate will have to defend his/her thesis before a viva voce board consisting of all DSC members, the Indian 'external' examiner and other interested students and faculty.

10. Award of Degree:

A student who has completed satisfactorily all prescribed requirements and has cleared all fees and dues payable to the Institute and the Hall of Residence shall be eligible for the award of Ph. D degree of the Institute by the Board of Governors on the recommendation of the Senate. The degree shall be awarded at the annual convocation for the academic session in which the student completes the requirements satisfactorily.

Appendix I

NO OBJECTION-CUM-SPONSORSHIP CERTIFICATE

This is to certify that Shri/Smt./Miss. _____ working as _____ in the Department/Centre/School _____ since _____. He /She intend to apply for Ph.D Programme under Sponsored category at IIT Kharagpur. The Institute/Department/Organization does not have any objection to his/her applying for the programme. The application of Shri/Smt./Miss. _____ would be considered as per rules of IIT Kharagpur for Sponsorship along with leave for minimum period of one year, if he/she selected, for the Ph.D Programme.

Date:

Signature/Endorsement of Head of the
Institution/Organization/Department (Office Seal)

Appendix II

Guidelines for Ph.D Program for Working Professionals with Minimum Residential Requirements

1) Primary Eligibility Criteria

- a) Reputation of the company or organization where the candidate is working.
- The companies (private/government), research organizations, Ministries of Central and State Governments wherein the candidate is presently employed should have well established reputation & image and possibly known to the faculty members of the department in which the candidate is desirous of seeking PhD admission.
 - If this is an enterprise or company, it is expected that it should have a listing in the premier stock exchanges and should have an annual turnover of at least 20 crore rupees.
 - List of the reputed companies/ organizations/ firms should be updated regularly at the departmental level to verify the credentials.
 - In case the department is not sure about the company/organization, the decision will be taken by a committee consisting of the 3 Academic Deans, Head of the Department/Centre/School and the Chairman CDC.
- b) Defense or other ministries of the Government of India or any other government organizations;
- c) Established industrial research and development organizations;
- d) Autonomous bodies and public undertakings excluding Academic Institutions.

2) Requisite Qualifications

Discipline	Minimum eligibility criteria
Engineering and Basic Sciences	B.Tech/BE/M.Sc or equivalent degree with a minimum CGPA of 7.5 on a 10 point scale or 70 % marks and with a minimum working experience of 2 years
HSS	<p><u>For candidates with more than 2 years and less than 10 years' work experience:</u> B.Tech/BE/M.Sc/MA or equivalent degree with a minimum CGPA of 7.5 on a 10 point scale or 70 % marks</p> <p><u>For candidates with equal to or more than 10 years' work experience:</u> B.Tech/BE/M.Sc/MA or equivalent degree with a minimum CGPA of 7.0 on a 10 point scale or 65% marks</p>
VGSOM	<p><u>For candidates with more than 2 years and less than 15 years' work experience:</u> B.Tech/BE/M.Sc/MA/MBA or equivalent degree with a minimum CGPA of 7.5 on a 10 point scale or 70 % marks</p> <p><u>For candidates with equal to or more than 15 years' work experience:</u> B.Tech/BE/M.Sc/MA/MBA or equivalent degree with a minimum CGPA of 6.5 on a 10 point scale or 60% marks</p>

SMST	<p><u>For candidates with MBBS degree:</u> Minimum CGPA of 7.0 in 10 point scale or 65 % marks</p> <p><u>For candidates with B.Tech/BE/M.Sc:</u> A minimum CGPA of 7.5 on a 10 point scale or 70 % marks</p>
RGSoIPL	A minimum CGPA of 6.0 on a 10 point scale or 55% marks in LLB, and with a minimum work experience of 10 years.

For all the disciplines:

The candidate must meet the minimum eligibility criteria to be shortlisted for test and interview. Any conversion of CGPA to percentages of marks (or vice versa) to meet this criterion will not be permitted unless the conversion formula is explicitly mentioned in the transcripts.

Candidates with higher than the minimum academic qualification will be given relaxation in the course requirement as per Institute rules.

Experience: Two years of post-qualification experience (experience may include stints at multiple organizations) for candidates holding Bachelor/Master degree in relevant disciplines.

Candidates need to provide a '**NO OBJECTION**' certificate issued from their company, stating it has no issues with the candidate pursuing PhD under the proposed scheme: **PhD Program for Working Professionals with Minimum Residential Requirements**. No commitment of financial support or the continuation of their employment during or after the PhD is required.

3) Selection of the Candidate

- a) Candidates who meet the above requirements should look out for prospective faculty members in the department where he/she is interested to register for his/her PhD degree.
- b) A research proposal approved by the prospective supervisor **must** be submitted by the candidate at the time of the application.
- c) The candidates fulfilling the above will have to appear for interview/test along with other regular candidates appearing for PhD admissions.

4) Requirement of Courses & Examinations

- a) The coursework will be a minimum of **20** credit points (for candidates with Bachelor's degree) and **16** credit points (for candidates with Master's degree) with due consideration to special requirements if any. No compulsory courses e.g., English for communication, management etc. are required.
- b) A plan of study shall be prescribed by the DSC (constituted as per the prevalent norms) which may include besides the available courses in the Institute, courses of MOOCS/NPTEL/virtual classrooms/interactive exercises and active learning programs offered only by

IIT/IISc/IIM/IISER/AIIMS. The GIAN courses may also be specified, if found relevant. For ongoing MOOCS courses the grade assigned at the end of the course will be directly transferred to the student's coursework. For all other courses the concurrence from a faculty member to set the question paper and evaluate the performance of the student should be obtained.

c) Self-study courses with standard format (weekly or bi-weekly assignments and its uploading in the ERP) will be mandatory to ensure progress and rigor. The candidate will have to appear for **only the end semester examinations**, preferably during the regular examination period of IIT Kharagpur. For self-study course the consent of the subject teacher must be obtained before registration.

d) At the end of the online & contact courses listed above, the student should submit the course completion certificate(s) with grades/marks for record in his/her course work.

e) Submission of semester progress report through seminar and presentation will be compulsory.

f) The candidate shall have to spend at least one week per semester at IIT Kharagpur, interacting with his supervisor that may include working in the laboratory. During this period the student may stay at appropriate guest houses of the Institute on payment basis, subject to availability. If the student needs to spend extended period (beyond one month), IIT Kharagpur will extend hostel, library, outdoor medical and other facilities on payment basis. HMC should decide on whether to accord facilities including inter hall/institute activities on a case by case basis.

5) DSC Formation and Registration

The selected candidates will have a Doctoral Scrutiny Committee (DSC) as per the existing regulations. A person with the suitable background from the parent company is preferred as the Joint Supervisor but it is not mandatory.

6) Duration of Ph.D Program

The minimum duration of Ph.D program for such candidates is 3 years and the maximum tenure is 8 years from the date of enrolment.

7) Annual Progress Report

The candidate will have to submit a yearly progress report and appear for seminars every year after his/her registration. In addition, the candidate will have to appear for a comprehensive examination (viva voce only) before registration seminar.

8) Synopsis and Thesis Submission

a) In order to become eligible for the submission of the synopsis Seminar, the candidate must have at least two publications in SCI journals/monographs.

b) The rest of the rules for synopsis, thesis submission/ viva-voce will be as per the existing rules of the Institution.

9) Fees

- a) The tuition fee for this program will be Rs. 25000/- per semester and it may be revised from time to time.
- b) There is no provision of scholarship/fellowship for the prospective Ph.D candidates.

All other rules/norms of the Institute regarding Ph.D students will be applicable.