Indian Institute of Technology Kharagpur

Information Brochure
Ph.D Admissions 2018-19 (Spring Semester)

CONTENTS

1. GENERAL

1. **Important Guidelines for Ph.D. Application**

    Applications are invited for admission to the Ph.D. Programme (Regular, Sponsored ,Individual Fellowship i.e. CSIR/UGC/DBT/ICMR/INSPIRE categories of the Institute and Working Professionals) in the Spring Semester of 2018-2019 in all disciplines of Engineering, Technology, Science, Architecture & Regional Planning, Humanities & Social Sciences, Rural Development, Law and Management. Admission to reserved category candidates will be done as per the Government of India notification.

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

    Application fee is Rs.1000/- for Unreserved/OBC/Transgender candidates and Rs.500/- for SC/ST/PwD/ Women candidates.

2. **Important Dates:**

Commencement of Online application	09.09.2018 (Sunday)
Website closure for submission of online application	22.10.2018 (Monday)
Last date for receipt of hard copy of completed application (**for project sponsored category)** at the Academic(PGS&R) Section	26.10.2018 (Friday)
Test & Interview to be conducted in the respective Departments/Centres/Schools (for shortlisted candidates)	
Agricultural & Food Engineering, Aerospace Engineering, Civil Engineering, Computer Science & Engineering, Deysarkar Centre of Excellence in Petroleum Engineering, Energy Science & Engineering, Humanities & Social Sciences, Industrial & Systems Engineering, Physics	28.11.2018 at 9.00 A.M.
Architecture & Regional Planning, Chemistry, Electrical Engineering, Educational Technology, G.S. Sanyal School of Telecommunications, Mining Engineering, Rajiv Gandhi School of Intellectual Property Law, Vinod Gupta School of Management, Theoretical Studies	29.11.2018 at 9.00 A.M.
Advanced Technology Development, Centre for Artificial Intelligence, Centre for Computational and Data Sciences, Cryogenic Engineering, Centre for Oceans, Rivers, Atmosphere & Land Sciences, Environmental Science & Engineering, Mathematics, Metallurgical & Materials Engineering, Rubber Technology, Rural Development	30.11.2018 at 9.00 A.M.
Electronics & Electrical Communication Engineering, Biotechnology, Materials Science, Rajendra Mishra School of Engineering Entrepreneurship, Geology & Geophysics, Subir Chowdhury School of Quality & Reliability	03.12.2018 at 9.00 A.M.
Bioscience, Chemical Engineering, Medical Science & Technology, Ocean Engineering & Naval Architecture, Ranbir & Chitra Gupta School of Infrastructure Design & Management, Mechanical Engineering, Nano-Science & Technology, Water Resources , Rekhi Centre of Excellence for the Science of Happiness	04.12.2018 at 9.00 A.M.
Issue of Offer letters to the Selected Candidates	14.12.2018 (Friday)
Date of Admission	02.01.2019 (Wednesday)

3. **Instructions to fill online Application form.**

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 it is required to validate your information along with your digital photograph and signature.

STEP-II : Make PAYMENT and SUBMIT Application

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

STEP-III : Take PRINT

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

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

The candidates shortlisted for test & interview will be informed through email only. Their names will also be notified in the webpage. However, candidates can see their status through login and download the interview letter, if shortlisted.

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".

Today, IIT Kharagpur has come a long way to its present position of pre-eminence with 19 academic departments, 8 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. In a study, sponsored by the Department of Science and Technology, Government of India, IIT Kharagpur is found to have the highest relative employment productivity index among the IITs and is the top supplier of fresh engineers/technologists to the public and private sector industries. It also ranked first among the IITs in the production of science and engineering Ph.Ds.

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

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 fully 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. 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, Golebazar, 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 on the first floor of 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 as well inside the Gymkhana premises. Post Office is located close to the State Bank 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.

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.ernet.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.

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
Artificial Intelligence	http://www.iitkgp.ac.in/department/AI
Advanced Technology Development	http://www.iitkgp.ac.in/department/AT
Centre for Educational Technology	http://www.iitkgp.ac.in/department/ET
Centre for Oceans, Rivers, Atmosphere and Land Science	http://www.iitkgp.ac.in/department/CL
Centre for Theoretical Studies	http://www.iitkgp.ac.in/department/TS
Centre for Computational and Data Sciences (CCDS)	http://www.iitkgp.ac.in/department/CD
Cryogenic Engineering	http://www.iitkgp.ac.in/department/CR
Rekhi Centre of Excellence for the Science of Happiness	http://www.iitkgp.ac.in/department/RX
Deysarkar Centre for 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
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) Minimum 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) Minimum 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

c)

Note: CGPA will not be converted into percentage marks if the degree awarding Institute provides marks in CGPA system. Their admission will be based on the CGPA 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 years programme)
> d) MBA / PG Diploma in Management of 2-year duration (after completion of B.Tech/M.Sc/MA/M.Com)
> e) LLM (2 years programme) 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) An equivalent of the aforesaid degree

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 program)
> 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 completed
> f) 5 years (minimum) of integrated LLB degree after 10+2 examination OR 3 years LLB degree after 10+2+3 examination OR LLM (1 year programme) after LLB degree (minimum 5 years)
> g) A degree equivalent to any of the above

3.3. Additional Requirements for different Admission category

a) **Regular with Institute Assistantship**

1) Candidates who is having minimum qualifying degree as mentioned in **3.2(b) above should have to possess a valid GATE score** that is above the cut off level (accepted for M.Tech./MCP admission in a particular year) as decided by the Senate from time to time or **NET qualification with FELLOWSHIP** for award of Institute Research Assistantship. Candidates who have merely qualified in NET examination but have not got a fellowship will not qualify for Institute Research Scholarship.

2) A person who is in employment and is applying for Institute Assistantship and selected

for admission, he/she must resign and produce the acceptance of resignation by the employer at the time of joining.

3) The value of the Institute Research Assistantship shall be as per MHRD norms.

4) No Research Student shall be permitted to receive any emoluments, salary, stipend or any other scholarship/assistantship during the tenure of award.

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 fellowship agency (i.e. CSIR/UGC/ DST/DBT/ICMR etc.).

2) Candidates admitted under Individual Fellowship category shall not be entitled to award of Institute Assistantship.

c) Sponsored

1) Persons who possess the minimum prescribed qualifications as mentioned in 3.2.(a) & 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) defence 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, page 14*) 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 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 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.

d) PH.D. through Project

1) Persons who possess the minimum prescribed qualifications as mentioned in 3.2.(a) & 3.2.(b) and are working in a sponsored project of the Institute (i.e. under 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 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 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 IIT

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

1) The candidate must meet the following criteria to be shortlisted for interview and test. She/he should be having (at least) BTech/BE/MBBS/MSc degree (or equivalent degrees) from a reputed educational institution with a minimum CGPA of 8.0 in a 10 point scale or 75 percentage of marks in their Bachelor's as well as Masters' degree (if applicable). However, any conversion of CGPA to marks (or vice versa) to meet this criterion will not be permitted
2) Experience: Two years of post qualification experience (experience may include stints at multiple organizations) for candidates holding Bachelor/Master degree in relevant disciplines
3) 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.
4) Detailed guidelines are available at **Appendix- II (page 15)**

3.6. Special Notes:

1) Department/Centre/School may fix additional admission criteria without compromising the eligibility criteria mentioned here.
2) Mere fulfillment of eligibility criteria does not give guarantee for admission to the PhD programme.

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/Computer Test
   c. Interview

5. Payment of fees and deposits:

Every Research Scholar shall be required to pay at the time of joining the following items 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, 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 DSC considering the student's skill requirements for the research work to be under taken 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 on M.Tech. or equivalent degree, who had done their qualifying degree 8 years before the 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, who had done their qualifying degree 8 years before the admission:
         Lower Limit: 40.

Candidates assigned 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 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 D.S.C. and D.A.C. (PG&R) present. If the seminar is satisfactory the candidate will be allowed to register for the degree. However, if the D.S.C. and D.A.C.(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 D.S.C. and D.A.C.(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 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 D.S.C. and D.A.C. (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 D.S.C. is satisfied about the work. If the D.S.C. 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 D.S.C. approves the submission on the basis of this seminar.

9. **Thesis and Defence :**

On successful completion of the seminar the D.S.C. 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 Registry.
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 D.S.C. members and the Indian 'external' examiner.

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.

<div align="right">**Appendix I**</div>

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)

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Appendix II

Guidelines for PhD Program for Working Professionals with Minimum Residential Requirements

1) <u>Primary Eligibility Criteria</u>

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 Dean PGS&R, Dean UGS, Head of the Department/Centre/School and the Chairman CDC.

b) Defence 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) <u>Requisite Qualifications</u>

a) The candidate must meet the following criteria to be shortlisted for interview and test. She/he should be having (at least) BTech/BE/MBBS/MSc degree (or equivalent degrees) from a reputed educational institution with a minimum CGPA of 8.0 in a 10 point scale or 75 percentage of marks in their Bachelor's as well as Masters' degree (if applicable). However, any conversion of CGPA to marks (or vice versa) to meet this criterion will not be permitted.

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

c) 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 2**0** credit points (for candidates with Bachelors degree) and **16** credit points (for candidates with Masters 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 though 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) <u>DSC Formation and Registration</u>

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

6) <u>Duration of PhD Program</u>

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

7) <u>Annual Progress Report</u>

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) <u>Synopsis and Thesis Submission</u>

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) Rest of the rules for synopsis, thesis submission/ viva-voce will be as per the existing rules of the institution.

9) <u>Fees</u>

a) The tuition fee for this program will be Rs. 25000 per semester and it will be revised from time to time.

b) There is no provision of scholarship for the prospective PhD candidates.

Initially efforts will be made to maintain the ratio of one such type of PhD candidates per four faculty members with a view to restrict not more than 125 of such type of PhD candidates at a time pursuing PhD in the institute.

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