1 Ph. D. PROGRAMMES

The Ph.D. programmes in various engineering and technology disciplines including basic sciences (29 Programmes) which are o ered on the Main Campus are also o ered at this campus.

1.1 COURSES OFFERED

Table 1.1 Di erent Specializations for Ph.D. Programmes.

Sr. No.	Degree	Specialization
1	Ph. D. (Tech.)	Agrochemical Engineering
2		Bioprocess Technology
3		Chemical Engineering
4		Dyestu Technology
5		Energy Engineering
6		Fibres and Textile Processing Technology
7		Food Biotechnology
8		Food Engineering and Technology
9		Green Technology
10		Lipid Engineering
11		Perfumery and Flavour Technology
12		Petrochemical Engineering
13		Pharmaceutical Technology
14		Plastics Engineering
15		Polymer and Materials Engineering
16		Surface Coating Technology
17		Civil Engineering
18		Electrical Engineering
19		Electronics Engineering
20		Mechanical Engineering
21	Ph.D. (Sci.)	Biochemistry
22		Biotechnology
23		Chemistry
24		Food Science
25		Mathematics
26		Physics
27		Textile Chemistry

All Ph. D. programs are now redesigned with course work as per UGC regulations.

1.2 CENTRE OF EXCELLENCE IN RESEARCH AND INNOVATION

Some Centres of Excellence will be in di erent areas relevant to the region, nationally and internationally niche areas will be started in a phase wise manner. Currently we have acquired high end characterization equipment to conduct research in all fields of science and technology. These equipment have been located in the premises of College of Engineering and Technology (CET) in the vicinity of our current campus in Bhubaneswar.

1.2.1 TUTORS-CUM-RESEARCH FELLOWS

All current faculty members have been given Tutor-cum-Research Fellows whose duties include assisting the faculty in home assignments and laboratories.

1.3. DOCTOR OF PHILOSOPHY (Ph.D.) PROGRAMMES

1.3.1 APPLICATION PROCEDURE

All these admissions will be conducted by the Institute of Chemical Technology, Mumbai Campus FOR ONLINE ADMISSION FORM VISIT

http://www.ictmumbai.edu.in

1.3.1.1 INTAKE CAPACITY:

There is no prescribed intake capacity for any of the Doctoral courses/ branches since the number of available fellowships and the requirement by the research supervisors varies every year. Several research projects, either funded by various government agencies or private industries, have provisions for fellowships. No admission to a Ph.D. course is done without fellowship, although the amounts vary depending on the source of funding and the candidate's qualifications.

1.3.1.2 INSPIRE FELLOWSHIP FROM DEPARTMENT OF SCIENCE AND TECHNOLOGY, GOVT OF INDIA

First Rank holders in Master's degree in Engineering/ Technology/ Pharmacy/ Science of any UGC/ AICTE recognized Indian University or Institute/ Statutory Body in India can apply for award of INSPIRE FELLOWSHIP, a scheme of the Government of India to avail research grants for a period of five years for doing research leading to Ph.D. degree. Application format and necessary documents for application are available on the website *www.inspire-dstgov.in*. Eligible candidates should apply directly to DST and after getting provisional acceptance, they may be considered for admission at ICT, subject to fulfillment of other criteria.

1.3.1.3. AICTE NATIONAL DOCTORAL FELLOWSHIP (NDF) SCHEME:

AICTE o ers PhD fellowships of Rs. 28000 per month plus HRA in a few selected institutes including ICT in all branches of engineering and technology as well as pharmacy. AICTE QIP will also include ICT for faculty members desirous of enrolling for doctoral degrees. Watch for their advertisement.

Visit the following two websites.*http://www.aicte-india.org/content/national-doctoral-fellowship-ndf*
https://ndf.aicte-india.org/appHome.html#!/

The last date for the application to AICTE for NDF for this year is **May 12, 2019**

1.3.1.4 UGC/CSIR FELLOWSHIPS

Candidates are requested to visit the websites of these bodies for details of fellowships available with them under di erent criteria. All PhD students admitted to any branch in ICT must receive fellowship from some funding agency or industry or collaborative programmes or exchange scheme. No full time student is admitted to the Ph.D. programme without full fellowship.

1.3.1.4.1 ELIGIBILITY CRITERIA FOR ADMISSION TO Ph.D. (Tech.)/ Ph.D. (Sci.)

For Ph.D. (Tech.) course at Sr. No. 1, 3, 5 and12 in Table 2, the candidate must have passed the Master's degree examination in the Agrochemical Engineering / Chemical Engineering / Chemical Technology (any branch at ICT)/ Pharmacy/ Plastic Engineering of ICT/ [(M.E in Petrochemical Engineering/ Environmental Engineering) (Provided Bachelor Degree in Chemical Engineering)] or any other UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).

For PhD (Tech.) course at Sr. No. 2 in Table 2 must have passed Master's degree examination in the Chemical Engineering/Bioprocess Technology/ Chemical Technology (any branch at ICT)/ Pharmacy/M. Tech. Biotechnology/Biochemical Engineering/ or any other UGC recognized university as equivalent there to with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category.

For Ph.D. (Tech.) courses at Sr. No. 4, 6, 9, 10, 11, 13, 14, 15 and 16 in Table 2, the candidate must have passed the Master's degree examination in the Chemical Engineering / Chemical Technology (any branch at ICT)/ Pharmacy/ Plastic Engineering of ICT or any other UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).

For Ph.D. (Tech.) courses at Sr. No. 17-20 in Table 2, the candidate must have passed the Master's degree examination in Mechanical / Production / Industrial / Thermal / Machine design / Machine tools / Automobile / Material Science / Electrical / Power systems / Control systems / Instrumentation/ Civil / Structural / Environmental / Civil and Water management / Transportation engineering, construction / construction management / Geotechnical / Water Resources from any UGC recognized university as equivalent thereto with 60% marks or equivalent CGPS (55% marks or equivalent CGPA in case of reserved category).

For Ph.D. (Tech.) course at Sr. No. 7 in Table 2 must have passed the Master's degree in Food Engineering and Technology / Food Technology/ Biotechnology/ Food Biotechnology/ Food and Biochemical Engineering/ Chemical Technology (any branch at ICT)/ Chemical Engineering of any UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA 55% marks or equivalent CGPA in case of reserved category.

For Ph.D. (Tech.) course at Sr. No. 8 in Table 3.4.1 must have passed the Master's degree in Food Engineering / Food Technology/ Food and Biochemical Engineering/ Chemical Technology (any branch at ICT)/ Chemical Engineering of any UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA 55% marks or equivalent CGPA in case of reserved category.

For Ph.D. (Sci.) courses at Sr. No. 21 and 22 in table 2, the candidate must have passed the Master's degree examination in any biological faculty of science of any university recognized by UGC with minimum of 55% marks or equivalent CGPA (50% MARKS OR EQUIVALENT CGPA in case of reserved category).

For Ph.D. (Sci.) courses at Sr. No. 23, 25 and 26 in Table 2, the candidate must have passed the Master's degree examination in the respective Subject of any University recognized by UGC with minimum of 55% marks or equivalent CGPA (50% marks or equivalent CGPA in case of reserved category).

For Ph.D. (Sci.) course at Sr. No. 24 in Table 2, in Food Science the candidate must have passed the M. Sc examination in Food Science, Food Processing, Nutrition, Home Science, Post-harvest Technology, Horticulture, Dairy Science, Biochemistry, Microbiology, Organic Chemistry of any UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).

For Ph.D. (Sci.) course at Sr. No. 27 in Table 2, in Textile Chemistry, the candidate must have passed the M. Sc. examination in Textile Chemistry/ Textile Clothing/ Life Sciences/ Biochemistry/ Microbiology/ Chemistry of ICT or of any University recognized by UGC with minimum of 55% marks or equivalent CGPA (50 % marks or equivalent CGPA in case of reserved category).

Further, candidates from any of these streams must clear the written test of the institute which are based on the syllabus.

The candidates who have passed the Master's degree by Research of any University recognized by UGC may be considered for admission only if they hold fellowship from any recognized funding agency.

The candidates qualified in NET/ GATE/ GPAT/ CSIR/ DBT/ - JRF examinations or other equivalent examinations and holding valid fellowship will be preferred.

Apart from regular full time on- campus candidates, following candidates are also eligible for admission to Ph.D. (Tech.)/ Ph.D. (Sci.):

(i) Permanent full time teachers of College/ Institute

(ii) Employees of National laboratories/ Government Institutions

(iii) Employees of Industry

However, persons qualified in NET/ CSIR/ DBT-JRF and holding valid

fellowship obtained from Government funding agencies such as DST, ICMR, UGC, CSIR, etc. are exempted from the entrance written Test. Admissions to such candidates are open throughout the academic year.

1.3.1.4.2 ELIGIBILITY CRITERIA FOR TEACHERS FOR ADMISSION TO Ph. D. (Tech.) / Ph. D. (Sci.)

Following are the requirements in addition to the criteria mentioned under heading 3.3.3.1. above.

a) The candidate should be a permanent teacher having full time teaching experience of at least two years in Degree College or five years in Junior college / Diploma College / Polytechnics (a liated to statuary bodies).

b) Teachers who have been in the service of any Engineering and Technology College approved by the UGC/AICTE are entitled for registration for Ph. D. (Tech.) with the faculty of the ICT.

c) Teachers who have been in the service of any Science College approved by the UGC are entitled for registration for Ph. D. (Sci.) with the faculty of the ICT.

d) The college management should undertake the responsibility of releasing the candidate for course work, experimental work or discussions with the concerned research guide from time to time. A proper time table should be prepared by the concerned teacher and his supervisor, which will be approved by the Head of Department/ Centre Co-ordinator. A bond in this regard should be signed and approved by the Vice Chancellor, ICT.

e) Teachers can work in the ICT laboratories during vacations and holidays and after their o ce hours if they come from colleges in the city or nearby. They must indicate on which date they will avail of the research facilities in ICT. A proper log book must be maintained by the candidate duly signed by his supervisor which will be authenticated by the Head of Department/ Centre Co-ordinator.

f) A maximum period of 5 years extendable by 1 year will be allowed in case of teachers who carry out research part time but put in at least 3 months full time work in a year in the ICT labs. In such cases, part of the experimental work could be allowed to be done in their premises for which their management will provide them with necessary facilities. The characterization and other sophisticated analysis must be done in ICT. Exclusive theoretical work should be discouraged as much as possible to give the teachers a hands- on experience and to bring them into an environment of research. However, this will be left to the individual supervisor's discretion, who should take abundant precaution to avoid unethical practices.

g) The registered candidates will be required to publish or patent some part of their work within two years of the registration otherwise this registration will not be continued. The publication must be done in peer reviewed international journals. Multi-authored papers without much input from the teacher should be avoided. Conference proceedings which are not peer reviewed will not be considered as publications.

h) Teachers registering themselves as Ph.D. student of ICT should not register any Masters students with themselves in his/her own college to avoid research by proxy. The candidate as well as his/her supervisor must give an undertaking, with a counter signature of the concerned principal to this e ect to avoid degeneration of this novel concept into a Ph.D. by unscrupulous means.

i) If the teacher intends to join the ICT on leave without pay for a period of three years, then the candidate may be eligible for the UGC fellowship under our SAP programme, provided he/ she successfully clears the Institutional entrance tests.

j) All regular admissions criteria are applicable to these candidates and they must also do the course work required for Ph.D. programme.

1.3.1.4.3 ELIGIBILITY CRITERIA FOR CANDIDATES WORKING IN NATIONAL LABORATORIES/ GOVERNMENT INSTITUTIONS FOR ADMISSION TO Ph. D. (Tech.) / Ph. D. (Sci.)

Following are the requirements in addition to the criteria mentioned under heading 3.3.3.1. above.

a) The candidate should be a permanent employee working in National Laboratories/ Government Institutions having minimum 2 years ofservice.

b) The management of the organisation should undertake the responsibility of releasing the candidate for course work, experimental work or discussions with the concerned research guide from time to time. A proper time table should be prepared by the concerned candidate and his supervisor, which will be approved by the Head of Department/ Centre Co-ordinator. A bond in this regard should besigned and approved by the Vice Chancellor, ICT.

c) Such candidates can work in the ICT laboratories during holidays and after their o ce hours if they come from organisation in the city or nearby. They must indicate on

which date they will avail of the research facilities in ICT. A proper log book must be maintained by the candidate duly signed by his supervisor which will be authenticated by the Head of Department/ Centre Co-ordinator.

d) The registered candidates will be required to publish or patent some part of their work within two years of the registration otherwise this registration will not be continued. The publication must be done in peer reviewed international journals. Multi-authored papers without much input from the teacher should be avoided. Conference proceedings which are not peer reviewed will not be considered as publications.

e) All regular admissions criteria are applicable to these candidates and they must also do the course work required for Doctoral programme.

1.3.2 ADMISSION FOR INDUSTRY -SPONSORED IN-HOUSE CANDIDATES TO Ph.D. (Tech.) / Ph.D. (Sci.)

Following are the requirements in addition to the criteria mentioned above.

1. The candidate should have minimum 2 years of industrial experience.

2. Industry should have a well-equipped Research and Development and Quality Control laboratory with at least one Ph.D. employee working in the set up in the relevant area.

3. Industry is required to get recognition from ICT by the following procedure:

   i. After receiving request from an industry, a Committee appointed by the Vice Chancellor, ICT will make a visit to the industry laboratory. The ICT appointed Committee will consist of Dean (RCRM) as Chairman with a Professor nominated by the Vice Chancellor and the Head of the Department in the area of proposed research.

   ii. The committee will evaluate the activities and the competence of the R and D of industry following the guidelines of similar to those proposed by DSIR. All the expenses in connection with the visit will be borne by the industry concerned. The ICT committee will make recommendations to the Vice Chancellor, ICT for approval. The industry R and D will be recognized by the approval of the Vice Chancellor, ICT. In case the laboratory is already

recognized by DSIR, the visit by ICT committee will not be necessary.

iii. Once the R and D laboratory is recognized by the ICT, the industry is required to pay Rs. 5 lakhs for first four years (typical duration of Ph.D. work) and necessary contingency amount of Rs. 50,000/-per candidate per year (in the name of ICT, to be utilized by the Research Guide) for the conduction of the research activity. After four years, the renewal of the recognition will continue by payment ofRs. 1 lakh per year. Further, the industry should try to get recognition for their R and D set up from DSIR, based on the recommendation of the ICT appointed Committee.

4. During a year, an industry may nominate up to two employees (with required qualification) for registering for the doctoral degree at ICT under the supervision of ICT faculty.

5. The candidate is required to pay all the Ph.D. fees (over and above laboratory eligibility fees) as proposed by the ICT at appropriate time and will not be eligible for any fellowship. Also, the other requirements, like eligibility criteria, qualifying institutional tests, completion of course work, etc. need to be fulfilled by the industry candidate.

1.3.3 FEES, CONCESSIONS, CANCELLATIONS AND REFUND

1.3.3.1 FEES PRESCRIBED:

The candidates admitted 2019-20 are required to pay fees as prescribed by the State Government. The institutional fees to be paid by all the admitted candidates are as follows :

Ph.D. (Tech.)/ Ph.D. (Sci.)

Sr. No.	Type of Fees	Open and All reserve category students Fee for 1st Year (Rs.)
1.	Library Deposit	Rs. 2,000/-
2.	Fees	Rs. 76,000/-
	TOTAL	Rs. 78,000/-*

*In addition to above mentioned fee candidate will have to pay Rs. 20,000/- per year as contingency.