University Of Calcutta
Department of Chemical Technology
Admission to Ph.D. (Tech) Programme (RET 2025) in *Ceramic Engineering, Petrochemicals & Petroleum Refinery Engineering and Pharmaceutical & Fine Chemical Tech.*

Download Application Form

Total Number of Seats:

Ceramic Engineering	– 02
Petrochemicals & Petroleum Ref. Engg.	– 02
Pharmaceutical & Fine Chemical Tech.	– 03

Reservation in admission shall strictly abide by the West Bengal State Higher Educational Institutions (Reservation in Admission) Rules, 2013.

Eligibility: The eligibility of the candidate will be as per UGC rules.

(A) Candidates having degree in Bachelor of Technology or Master of Science (without NET/SET/SLET/GATE) securing 55% marks (selection through Entrance Test & Interview);

(B) Candidates having degree in Master of Technology or Equivalent or Master of Science (with NET/SET/SLET/GATE) securing 55% marks (**Selection through Interview only**).

Entrance Test:

- The Ph.D. Entrance test will be of 50 marks (duration 1 hr.) consisting of both Multiple Choice Questions (MCQ) and short questions.
- The Syllabus for the Entrance Test and subsequent list of the successful candidates will be available in the Departmental Notice Board (near the room of the HOD, Ground floor, Applied Chemistry Building).
- The successful candidates will have to appear for an interview for final selection.
- Declaration of names of selected candidates to be notified later (Subject to approval by the Honorable Vice Chancellor)

Important Dates:

- Last Date for Submission of Application Form: 26th May, 2025
- Date of Entrance Test : 18th June, 2025 (12:00 Noon)
- Publication of List of successful Candidates : Display in the Notice Board
- Date of Interview : 20th June, 2025 (2 p.m. onwards)

Venue:

- For Entrance Test: Departmental Seminar Room (2nd floor, Applied Chemistry Building)

- For Interview : Room of the HOD, Department of Chemical Technology
  (Ground Floor, Applied Chemistry Building)

All Candidates are requested to download the Application Form from the University website (www.caluniv.ac.in) and submit the filled-up Application Form, Attested copy of relevant mark sheets, along with the receipt of deposition of Application Fee of Rs. 100/-, paid through SBI Collect [(https://www.onlinesbi.sbi/sbicollect/payment/listcategory.htm), Payment Category: Misc Fees, Category: Admission for PhD] within the due date and send to the Head, Department of Chemical Technology, University of Calcutta, **via email** only (Email id: hdctcu@gmail.com).

No TA/DA shall be paid to the candidate for appearing the Entrance Test or called for the Interview.

UNIVERSITY OF CALCUTTA
Department of Chemical Technology

Application Form for Admission of the Ph.D. (Tech.) Programme 2025 in

Ceramic Engineering ☐

Petrochemicals & Pet Ref. Engg ☐

Pharmaceutical & Fine Chemical Technology ☐

Name (in BLOCK LETTERS):

Date of Birth :

Father's Name :

Sex : Male/Female/Third Gender

Marital Status :

Whether SC/ST/OBC/
Physically Challenged :

Nationality :

Address for Communication :

Phone No. : Mob: E-mail ID:

Academic Qualifications (Bachelor Degree onwards):

Name of the Examination	Year	University	Subjects taken	Div./Class	% of Marks

Whether qualified in NET/GATE/equivalent examination:

Signature of the applicant with date:

Self-attested copies of documents are to be attached.
*Candidates are requested to deposit application fee of Rs.100/-, paid through SBI Collect [(https://www.onlinesbi.sbi/sbicollect/payment/listcategory.htm), Payment Category: Misc Fees, Category: Admission for PhD] within the due date.
* Original documents may be asked for as and when required by the appropriate authority.
All self-attested scanned documents are to be sent to the Head, Department of Chemical Technology, University of Calcutta, **via email** only (Email id: hdctcu@gmail.com).

Syllabi for Entrance Test in Ph.D. (Tech.) Programme in
Ceramic Engineering

• Physics and Chemistry of Clay Minerals
• Refractories: Definition, Classification, Important Properties & Applications.
• Introduction to Glass & Vitreous Coatings.
• Introduction to Hydraulic Binders & Concretes.
• Introduction to Fine Ceramics, Electronic Ceramics.
• Analysis of important Ceramic Raw Materials and Products.
• Physical Testing of Ceramic Raw Materials & Products.

Petrochemicals and Petroleum Refinery Engineering

• Crude Oil & Petroleum Product Analysis-Qualitative & Quantitative
• Common Refinery Operations-Desalting, Distillation, Stripping, Absorption, Solvent Extraction,
Dewaxing, Desulphurizing, Reforming and Cracking.
• Petrochemical Feedstock: Preparations & Olefins Production
• Computer Operations-MS Windows XP Packages, Win word, Excel, Power Point.
• Optimization & Correlation Methods.
• Programming Languages, any one of –C/C++/Fortran 90/VB/VC++ & Handling Compilers of any of these.

Pharmaceutical & Fine Chemical Technology
• Principles of Analysis of Drugs & Fine Chemicals in Pharmaceutical & Cosmetic Formulations by
Chemical, Physico-Chemical, Biological and Micro-Biological Methods. Biological Standardization.
Toxicity Studies of Drugs. Statistical Methods of Evaluation.
• Rational Drug Design. Study of Synthetic Drug like Prostaglandins, Steroids and anti-HIV, biologically active Peptides, newer chemotherapeutic agents, chemically targeted drugs etc.
• Principles & Engineering, Fermentation of Dextran, Lactic Acid, Antibiotics of importance. Manufacture of Immunological Products like Bacterial and Viral Vaccines, Human Immunoglobulin, Monoclonal Antibodies, Tissue Culture Products and their utilization. Development of Genetic-Engineering Products. Bioreactors & Biosensors.
• Pre-formulation, manufacturing techniques of Novel Drug Delivery Devices. Unit Operations involved in formulations. Stability Studies, Product Development, GMP/GLP. Pharmacokinetics, Pharmacodynamic, Drug interactions.
• Optimization of Pharmaceutical and Bioprocesses. Programming languages-Fortran, C, C++ and
Basic.