



**JADAVPUR UNIVERSITY  
KOLKATA – 700032**

**FACULTY OF ENGINEERING & TECHNOLOGY**  
(Notice No. FET/Ph.D./01/2022 Date: 29/12/2022)

**ADMISSION TO THE Ph.D. (ENGINEERING AND PHARMACY) PROGRAMME  
FOR THE SESSION 2022-23**

Applications are invited from Indian nationals for admission to the Ph.D. (Engineering and Pharmacy) programme as per JU Ph.D. Regulation 2017 under the Faculty Council of Engineering & Technology, Jadavpur University. Please note the following before filling up the application form which is available from university web portal (<https://jadavpuruniversity.in> or, <http://www.jaduniv.edu.in>).

**Note:**

1. All applicants must have completed 2 (two) or 3 (three) Years (4 or, 6 Semesters respectively) M.E./M.Tech./M.Arch./M.Pharmacy or 3 (three) Years M.C.A. degree OR equivalent degree with at least 55% marks in aggregate or its equivalent grade 'B' in the UGC 7-point scale or equivalent grade in a point scale wherever grading system is followed, such as grade point of 6.25 in 10-point scale. A relaxation of 5% of marks, from 55% to 50% or an equivalent relaxation of grade, may be allowed for those belonging to SC/ST/OBC-A/OBC-B (one-creamy layer) / PwD and other categories of candidates as per the decision of the UGC/AICTE/State Govt. from time to time or for those who had obtained their Master's degree prior to 19<sup>th</sup> September, 1991 (M.E./M.Tech./M.Arch./M.Pharmacy./MCA from any University/ Institute recognized by UGC and in a course approved by AICTE).
2. Candidates have to pay the application fee of Rs.500/- (for each Departmental PhD programme) online through SBI Collect System using Credit Card / Debit Card / Net Banking. The application fee (Rs.500/- for each Departmental PhD programme) has to be paid through payment link: <https://www.onlinesbi.sbi/sbicollect/icollecthome.htm?corpID=643164> under the head of account **'FET Ph.D. Application Fee 2022-2023'**.
3. After payment, candidates have to submit the duly filled in application form along with a photocopy of online payment receipt (downloaded from SBI

Collect payment system after online payment) along with other requisite testimonials [i.e. self-attested photo copies of Mark-sheet & Certificates of Secondary, Higher Secondary, Graduation and Master Degree course, Documents/Certificates of CSIR-NET/UGC-NET/GATE/GPAT/SET/QIP/DST-INSPIRE/VISVESVARAYA/OTHER RECOGNISED FELLOWSHIPS (if any), SC/ST/OBC-A/OBC-B/PWD Certificate (if applicable)] and two (2) passport size photographs, to the Office of the Dean & Secretary, Faculty of Engineering & Technology (2<sup>nd</sup> Floor of TEQIP Building, Opposite to Gandhi Bhaban) on or before 20<sup>th</sup> January 2023 (between 11 AM to 4 PM) [except Saturday, Sunday and WB Govt. holidays] by person or by post. The university shall not be responsible for any postal delay.

4. Syllabus for Admission Test will be followed as per PhD Regulation 2017 [sec 18(VIII)]. The syllabi of the departments are available in the university web portal along with this notification. The admission test procedure for the department concerned will be notified in due time at a later date through the university web portal (<https://jadavpuruniversity.in> or, <http://www.jaduniv.edu.in>). The tentative schedule of the admission test is given below in this notification.
5. All eligible applicants will have to undergo the physical document verification process at the time of INTERVIEW in the concerned department of FET as per schedule. All selections will be provisional and may be cancelled at any point of time if the candidate is found ineligible against any of the required criteria.
6. Application to Ph.D. (Engineering/Pharmacy) Programme 2022-2023 (in sealed envelope) will be accepted from 03<sup>rd</sup> January 2023 to 20<sup>th</sup> January 2023 (between 11 AM to 4 PM), except Saturday, Sunday and WB Govt. Holidays, at the office of the Faculty of Engineering & Technology (2<sup>nd</sup> Floor of TEQIP Building, Opposite to Gandhi Bhaban). The candidates will be selected through an Admission Test (as per schedule) & Interview (dates to be notified in due time). All notifications regarding selection will be published in the university web portal (<https://jadavpuruniversity.in> or, <http://www.jaduniv.edu.in>). Candidates are requested to follow web portal notifications from time to time in this regard. Applicants under CSIR-NET/UGC-NET/JRF/GATE/GPAT/SET OR, QIP/ADF/DST-

**INSPIRE/VISVESVARAYA/Other recognized fellowship schemes have to appear in the interview only for final selection.**

7. Reservation:

(a) SC / ST / OBC Reservation:

Reservation of Seats for Scheduled Cast (SC), Scheduled Tribe (ST), Other Backward Class (Category A) (OBC-A) and Other Backward Class (Category B) (OBC-B) are as per Government of West Bengal Circular No. 267–Edn (U)/1U-89/13 dated 04.03.14 read with the West Bengal State Higher Educational Institutions (Reservation in Admission) Act 2013 (West Bengal Act X of 2013) gazetted on 30th April 2013 and the West Bengal State Higher Educational Institutions (Reservation in Admission) Rules 2013 gazetted on 4th January 2014. OBC Certificates should have proper validation of Non-Creamy Layer criteria conforming to Government of West Bengal Memorandum No. 1204-SBCW/MR-67/10 dated 27-07-2015.

As per circular no. BC-16014/1/82-SC dt. 06/08/1984 & BCD-I, D.O.12017/11/89-SCD (R. CELL) dt. 08/01/1990 and letter no. 1510-SCW dt. 31/05/2007 of the Government of West Bengal, candidates, with reservation certificates of SC / ST / OBC-A / OBC-B category issued by any State other than West Bengal, are not entitled for admission to SC / ST / OBC(A) / OBC(B) reserved seats in Educational Institutions in West Bengal.

(b) PwD Reservation:

Reservation of seats following the Rights of Persons with Disabilities Act, 2016, gazetted on 28 December 2016, Government of West Bengal letter No. 65–Edn(U)/1U-89/13 dated 16.01.2014 and notification No. 526-Edn (U)/1U- 137/14 Date: 29.05.2015 is available for Persons with Disability (PwD) who have a minimum 40% disability with respect to Locomotor disorder, Visual impairment and/or Speech & Hearing Impairment. Certificate in this order is to be issued by the Officer-in-Charge or Medical Head of Primary Health Centres, Block Primary Health Centres, State General Hospitals, Rural Hospitals, Sub-Divisional Hospitals or the District Hospitals run by the State Government or any hospital run by a statutory body or authority.

8. **Department wise intake of Ph.D. Programme is given below. The vacancy matrix will be published shortly in the JU web portal.**

9. **NO INSTITUTIONAL SCHOLARSHIP IS OFFERED.**

10. For JU PhD Rules and Regulations, Please click on:

<https://jadavpuruniversity.in/download-centre/?jsf=jet-engine:download-centre-items&tax=download-centre-categories:93>

**Secretary, Faculty of Engg. & Tech.**

**Dean, Faculty of Engg. & Tech.**

**Proposed Intake and Department-wise Research Area for  
Ph.D. Programme: 2022-23**

<b>Mechanical Engineering Department</b>	
<b>Area of Research Field</b>	<b>Tentative vacancy</b>
Advanced Materials, Material Science, Finite Element Analysis, Manufacturing of Materials	
Tribology, Material Characterisation	
Energy, fluid flow and heat transfer, alternative fuels	
Material Science	
Thermal Engineering	
Cooling of Buildings using PCM, Utilization of Solar Energy, Modeling of Manufacturing/Solidification Process, CFD-Haet and Mass Transfer, others	
Electrohydraulic Systems and Control	
Tribology	
Heat Transfer, Combustion, Renewable Energy	
Non traditional machining	
Modeling of material nonlinearity	
Energy	
Electrohydraulic Systems, Control Systems	
Composite and ceramic material, Microfluidics, Product Development	
3D Printing	
Vibration, Rotor Dynamics, Vibration Control	
Modeling and Optimization of Robotic Manufacturing Systems	
Thermal Fluid Engg	
Vibration of structural elements	
Production Engineering	
Heat Transfer, Fluid flow, Computational Fluid Dynamics	
Material modelling , fracture, fatigue, optimisation	
Tribology of Materials	
Thermofluid science, Bioengineering	

Application of MCDM and soft-computing in manufacturing decision making, Supply chain management and logistics, Supply chain resiliency, Managing uncertainty in Supply chain, upplier selection, Manufacturing system automation .	
<b>Total</b>	<b>59</b>
<b>Civil Engineering Department</b>	
<b>Area of Research Field</b>	<b>Tentative vacancy</b>
Soil stabilization using admixture and Tunneling through stratified soil	
Behaviour of skew curved bridges	
Environmental Engineering	
Solid Waste Management; Environmental Management	
Dynamics analysis of liquid containers	
Behavioural Study of Steel Structural Member Strengthened with FRP laminates	
Performance of heat and water cured waste based composites, Tannery sludge based cement and alkali activated concrete, Use of Artificial Intelligence for predicting concrete properties	
Fluid structure and soil interaction	
Static and dynamic behavior of soft clay of Kolkata deposit.	
Geotechnical Engineering, Ground Improvement Techniques, Soil Reinforcement, Foundation Engineering, Slope Stability, Pavement Geotechnics	
Advanced biological treatment of waste water	
Numerical and analytical modeling of tunnel, retaining wall, anchor, slope, shallow foundations and deep (pile) foundations., Fundamentals of soil behaviour, Computational Geomechanics, Rock Mechanics and Rock Engineering	
Advanced water and waste water treatment	
Vibration control using particle dampers	
<b>Total</b>	
<b>Information technology Department</b>	
<b>Area of Research Field</b>	<b>Tentative vacancy</b>

Challenged Networks, AGI and ML	
Biodiversity, Data Mining, Data Archiving	
<b>Total</b>	<b>3</b>
<b>Chemical Engineering Department</b>	
<b>Area of Research Field</b>	<b>Tentative vacancy</b>
Energy from Waste through Thermochemical and biochemical processes, CO <sub>2</sub> Capture through photochemical processes, Microfluidic Reactors, Mathematical Modelling	
Membrane Separation, Waste valorization, Waste water treatment, Nanomaterial synthesis and application	
Green Hydrogen generation, Fuel cell - HTPEMFC, CO <sub>2</sub> to valuable product generation, Photo-and electro catalyst	
Nano-technology and Materials Engineering	
Gas-Phase Diffusion-Reactions, Separation and Purification of Fermented products, Functionalized Materials for carbon capture, Functionalized Materials for treating waste streams	
Waste Valorisation; Environmental Impact Assessment; Sustainable Biomass Conversion; Bio- Fuel; Fuel Additives; Catalysis; Reaction Engineering; Process Intensification and Simulation	
Wastewater Treatment, Green technology, Photo Catalysis, Nano-technology, Bio-fuel generation	
Energy Engineering	
Solid waste management, Water treatment, Phytochemical research, Nanotechnology	
Biomonitoring of air pollutants, Bioindicators, Solvent extraction Microwave assisted extraction	
Wastewater Treatment, Nanocomposite applications, Catalytic Reaction Engineering ( <a href="http://orcid.org/0000-0001-5581-9142">http://orcid.org/0000-0001-5581-9142</a> )	
Fluid mechanics, transport phenomena, multiphase flows for renewable energy sources and sustainable development	

Waste Water Treatment, Environmental Pollution Control, Biofuel Synthesis, Advanced Oxidation, Energy, Refinery Catalyst Development	
Green Technologies, Energy Efficiency, Renewable and sustainable Energy, Water purification, conservation and management, Energy Production and Storage	
Carbonaceous composite for energy storage and waste water treatment, Microplastic Remediation, Nanomaterials and Nanocomposites	
Wastewater treatment, Nanotechnology, Energy and fuels Sensor development	
<b>Total</b>	<b>52</b>
<b>Production Engineering Department</b>	
<b>Area of Research Field</b>	<b>Tentative vacancy</b>
Production Management	
Production and Operations Management, Supply Chain Analytics and amp; Management; Sustainability, Engineering Optimization, Industrial Design, Manufacturing Process and amp; Systems, Industry 4.0	
MCDM Technique, Metaheuristic Algorithms	
Advanced Manufacturing Process, Additive Manufacturing, Digital Manufacturing	
Ergonomics	
Laser Beam Machining/ Welding 3D Printing	
Electro-Chemical Discharge Machining (ECDM), Electro Discharge Machining, Micro Machining	
Flexible Manufacturing System and Robotics	
<b>Total</b>	<b>14</b>
<b>Power Engineering Department</b>	
<b>Area of Research Field</b>	<b>Tentative vacancy</b>
Waste Heat Recovery, Transport Phenomenon	
Automation and Control	
Surface Science, Thermal and Fluids Engineering	

Microgrid, Energy Hub, Artificial Intelligence	
Microgrid Monitoring, SCADA	
Power system economics, Power bidding optimization, Spot Pricing in deregulated electricity market, Solar PV system and its control, Renewable based microgrid system	
Design, Control and real time simulation, Metaheuristic Optimization of Energy System	
Renewable Energy, Soft Computing technique in energy system, Welding Technology, Laser Machining	
Thermal and Fluids Science	
<b>Total</b>	<b>19</b>
<b>Architecture Department</b>	
<b>Area of Research Field</b>	<b>Tentative vacancy</b>
Parametric Study Of Urban Transformations And Related Urban Developments, From Architecture Design & Urban Design Viewpoint	
Architecture, Urban Design, Sustainability, Planning	
<b>Total</b>	<b>4</b>
<b>Pharmaceutical Technology Department</b>	
<b>Area of Research Field</b>	<b>Tentative vacancy</b>
Polymer Based Drug Delivery and Tissue Engineering	
Synthetic and Natural Product Studies	
Natural Product and Drug Discovery	
Drug Delivery	
QSAR and RASAR and Read Acrom	
Pharmacology and Toxicology	
Natural Product Based Formulation	
Novel Drug Delivery System	
Natural Product Studies	
Molecular Modeling QSAR	
Formulation Development	
Drug Delivery	



NDDS	
Pharmacology (Metabolic Diseases)	
Computer Aided Drug Design anti-cancer Research Synthesis and Evaluation	
Drug Design and Discovery	
<b>Total</b>	<b>43</b>
<b>Electrical Engineering Department</b>	
<b>Area of Research Field</b>	<b>Tentative vacancy</b>
Control Systems	
Measurements and Instrumentation	
High Voltage Engineering	
Illumination Engineering	
Electrical Machines and Drives	
Power Systems	
<b>Total</b>	<b>36</b>
<b>Department of Food Technology and Biochemical Engineering</b>	
<b>Area of Research Field</b>	<b>Tentative vacancy</b>
Nutraceutical food product development	
Enzyme technology and Bioremediation	
Biochemical Engineering	
Plasma technology, Waste management	
Nano Science and technology, Bioremediation, Packaging	
<b>Total</b>	<b>9</b>
<b>Electronics and Telecommunication Engineering Department</b>	
<b>Area of Research Field</b>	<b>Tentative vacancy</b>
Artificial Intelligence, Machine Learning, Robotics, Control, Cognitive Neuroscience	
Microwave, Antenna	
Computer Vision, Machine Learning	
Wireless communication system , Intelligent transportation	

system, health care management using ML.	
Digital Signal Processing	
Wireless communication, Signal Processing	
Data Science and Artificial Intelligence	
Semiconductor Device and Circuit	
Wireless network, Image Processing	
<b>Total</b>	<b>26</b>
<b>Computer Science and Engineering Department</b>	
<b>Area of Research Field</b>	<b>Tentative vacancy</b>
Data Science, IoT-Cloud, Geoinformatics	
ML, Data Science	
Natural Language Processing	
Computer Vision, Medical Image Processing, Deep Learning	
Internet of Things, Big Data and Cloud, High performance computing	
Locomotion of Robots, Computational Geometry	
Image Processing	
Natural Language Processing, WSD, Text Data Mining	
Bioinformatics, Image Processing	
Image/Video processing, Physiological sensing	
Security	
Medical Image Processing, Biometrics	
Machine Learning and Deep Learning for Natural Language Processing and Social Media Data Analytics	
smartphone sensing, machine learning	
Natural Language Processing, Machine Learning, Data Analytics	
Machine learning, Deep Learning, Image Processing, Pattern Recognition, Data Analytics	
Data Mining, Machine Learning	
Medical Image Processing, OCR, Deep Learning	

Machine Learning, Bioinformatics	
Network Security, Distributed Computing, Digital Forensics	
<b>Total</b>	<b>29</b>
<b>Instrumentation and Electronics Engineering Department</b>	
<b>Area of Research Field</b>	<b>Tentative vacancy</b>
Electronic Olfaction, Analytical Instrumentation, Electronic Tongue, NIR Spectroscopy	
Logic synthesis, embedded system	
Intelligent Control, Computational Intelligence, Bio-informatics	
Signal Processing, Control System	
Filtering and estimation; Bio-medical instrumentation; Control systems; Signal processing	
Electronic Nose, Electronic Tongue, Pattern Recognition, Spectroscopic Instrumentation	
Electronic Nose, Electronic Tongue, Sensor development, Pattern Recognition	
Biomedical Sensors and Signal , Time Series Analysis	
Gas sensors and machine olfaction	
Cognitive radio network, Medical image processing, Microstrip antenna array	
Low power Stochastic Computing, IoT based image processing	
<b>Total</b>	<b>24</b>
<b>Construction Engineering Department</b>	
<b>Area of Research Field</b>	<b>Tentative vacancy</b>
Concrete Technology	
Structural Engineering	
Condition Monitoring of Structures	
Geotechnical Engineering	
Repair and Rehabilitation of Masonry and Concrete Structure	
<b>Total</b>	<b>9</b>

<b>Metallurgical and Material Engineering Department</b>	
<b>Area of Research Field</b>	<b>Tentative vacancy</b>
Welding, Conventional Composites, Nano Composites	
Nanomaterials, Materials Science	
Mechanical Property Evaluation of Steel	
Design of Steel Composition, Thermo-Mechanical Process design for developing Microstructure and Crystallographic Texture in Metallic Alloys; Structure-Property Correlation; Deformation and Fracture Behavior.	
<b>Total</b>	<b>13</b>
<b>Printing Engineering Department</b>	
<b>Area of Research Field</b>	<b>Tentative vacancy</b>
Printing Machines, Packaging Techniques, QA/QC in Printing, TPM, Standardization in Printing, Mechanics in Printing and Packaging	
Offset printing, paper technology and allied fields	
Image Processing, Computer Vision, Printing and Packaging Process Optimization, Automation in Printing and Packaging	
<b>Total</b>	<b>5</b>



**JADAVPUR UNIVERSITY**  
**ADMISSION TO PH.D. PROGRAMMES UNDER FET**  
**TENTATIVE SCHEDULE AND VENUE OF ADMISSION TEST**

Programme	Date	Time	Venue
Architecture	08/02/2023	11 AM	Dept. of Architecture
Chemical Engg.	08/02/2023	12 Noon	Chemical Engg. Dept.
Civil Engg.	09/02/2023	11 AM	Civil Engg. Dept.
Computer Sc. & Engg.	09/02/2023	1 PM	Computer Sc. & Engg. Dept.
Construction Engg.	06/02/2023	11 AM	Construction Engg. Dept. (SL Campus)
Electronics & Tele-Communication Engg.	08/02/2023	2 PM	Electronics & Tele-Communication Engg. Dept.
Electrical Engg.	10/02/2023	11 AM	Electrical Engg. Dept.
Food Technology & Bio-Chemical Engg.	09/02/2023	3 PM	Food Tech & Biochem Engg. Dept.
Information Technology	07/02/2023	11 AM	Information Technology Dept. (SL Campus)
Instrumentation & Electronics Engg.	07/02/2023	3 PM	Instrumentation & Electronics Engg. (SL Campus)
Mechanical Engg.	10/02/2023	2 PM	Mechanical Engg. Dept.
Metallurgical & Material Engg.	11/02/2023	11 AM	Metallurgical Engg. Dept.
Pharmaceutical Technology	11/02/2023	1 PM	Pharmaceutical Technology Dept.
Power Engg.	06/02/2023	1 PM	Power Engg. Dept. (SL Campus)
Printing Engg.	07/02/2023	1 PM	Printing Engg. Dept. (SL Campus)
Production Engg.	11/02/2023	3 PM	Production Engg. Dept.

**Date of Interview for the successful candidates will be published in due time.**

**Note:**

- The venues marked as (SL Campus) are at Jadavpur University Salt Lake Campus (Plot No.8, Salt Lake Bypass, LB Block, Sector III, Salt Lake City, Kolkata – 700106) and the rest are in Jadavpur University Main Campus (188, Raja S.C. Mallick Rd, Kolkata - 700032)
- **The candidates must bring all the documents (original and self-attested) for verification as mentioned in the admission information brochure at the time of INTERVIEW (date to be notified in due time).**
- Not reporting at the scheduled time will automatically cancel the candidature without further communication.
- Mobile phones, Calculators, Smart watch etc are not allowed in the examination hall.
- Reservation of Seats will be as per GoWB guideline.
- **Candidates MUST follow the PhD Admission Information Brochure 2022-23 for all details.**