

**JADAVPUR UNIVERSITY
KOLKATA – 700032**

**FACULTY OF ENGINEERING & TECHNOLOGY
(Notice No. FET/Ph.D./01/2021 Date 13.07.2021)**

**ADMISSION TO THE Ph. D. (ENGINEERING AND PHARMACY) PROGRAMME FOR THE
SESSION 2021 - 2022**

Applications are invited from Indian national for admission to the Ph. D. (Engineering and Pharmacy) programme as per New Ph.D. Regulation 2017 under the Faculty Council of Engineering & Technology, Jadavpur University. Please note the following before filling up the online application form which is available from university web portal (www.jaduniv.edu.in).

Note:

1. All applicants must have successfully completed at least 2 (two) Year M.E./M. Tech./M. Arch./M. Pharmacy or 3 (three) Year M. C.A. degree OR equivalent degree from any University/ Institute recognized by UGC and course is approved by AICTE. Final year students may also apply, but their registration (if selected) will not be processed unless they submit their final result by 31st October 2021.
2. Candidates should apply online through the University website (<http://www.jaduniv.edu.in>).
3. Candidates have to pay the application fees Rs.500/- (each Department) online through SBI Collect System using Credit Card / Debit Card / Net Banking. Payment link will be accessible on & from 15th July 2021.
(Payment Link: <https://www.onlinesbi.com/sbicollect/collecthome.htm?corpID=643164>)
4. After payment, the saved / scanned copy of the downloaded form is to be submitted on and from 16th July, 2021 to 31st July, 2021 along with an online payment receipt and all testimonials through Google Form (Link: <https://forms.gle/Jbh3kb5bHPE6aqDL7>). Proper legible scanned copies of the following documents [i.e., self-attested scanned copies of Mark-sheet & Certificates of Secondary, Higher Secondary, Graduation and Master Degree course, Certificate/allotment/enrollment documents of CSIR-NET/UGC-NET/JRF/GATE/GPAT/SET OR, QIP/ADF/DST- INSPIRE/VISVESVARAYA/Other Recognized Fellowships (if any), SC/ST/OBC-A/OBC-B/PWD Certificate (if applicable)] and passport size photograph] are to be uploaded along with the application. **In any such case of multiple pages, the same should be scanned as a single pdf file.**
5. All online applicants will have to undergo the physical document verification process subsequently on a later date in the office of the Dean & Secretary, Faculty of Engineering & Technology, Jadavpur University Main campus, Kolkata 700032. Or, in the concerned Office of the HoDs of the Departments under FET to be notified in due time by the university. All selections will be provisional and may be cancelled at any point of time if the candidate is found to have not fulfilled any of the required criteria.
6. Vacancies are declared along with the proposed areas of the research field and reservation policy will be considered as per Govt. of W. B. rule.
7. Syllabus for Admission Test will be followed as per new Ph.D. Regulations 2017 [section 18 (viii)]. The specific syllabus and admission test procedure of the Department concerned will be notified in due time at a later date through the university website (<http://www.jaduniv.edu.in>).
8. Application to Ph.D. (Engineering/Pharmacy) Programme 2021-2022 will be accepted from 16th July, 2021 to 31st July, 2021 and the candidates will be selected through an Admission Test & Viva-Voce. The modalities of selection (on-line/off-line) will be notified at a later date through the University website (<http://www.jaduniv.edu.in>). Candidates are requested to follow website 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.
9. 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 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.

10. Department wise intakes of Ph. D. Programmes are given below.
11. NO INSTITUTIONAL SCHOLARSHIP IS OFFERED.
12. For JU PhD Rules and Regulations, please click on: http://www.jaduniv.edu.in/upload_files/scroll_info/1496906302.pdf
13. Contact email id for PhD Admission under FET: phdfet@jadavpuruniversity.in

Secretary, Faculty of Engg. & Tech.

Dean, Faculty of Engg. & Tech.

**Intake and Research Areas of the Departments under Faculty of
Engineering & Technology for Ph.D. Registration Programme 2021-22**

Department of Mechanical Engineering	
Area of Research Field	Number of Vacancy
Tribology	
Thermal Engineering	
Microfluidics Composite Materials, nanoceramics and nano- composite, Product Development	
Material Science, Fluid Mechanics	
Combustion, Multiphase Flow, Heat Transfer	
Mechanics of Composites, Smart Materials and Structural Vibration	
Modeling and optimization in manufacturing and service systems	
CFD, Nano- fluid, Turbulence	
Vibration, Rotor Dynamics, Rotor Vibration Control	
Hydraulics	
Advanced Manufacturing and Reliability Engineering	
Vibration of structural elements	
CFD/ Thermo- fluid/ Advanced Materials	
Dynamics of Structural Elements, Tribology	
Material characterization for Fatigue, Fracture Design Optimisation	
Fluid Mechanics/ Hydraulic control/ Aerodynamics	
Tribology of Materials	
Total	
Department of Civil Engineering	
Area of Research Field	Number of Vacancy
Environmental Engineering, Water Treatment, Hybrid Novel Bioreactor	
Failure of laminated composite shell structures	

Experimental study on SHM	
Environmental Engineering & Science	
Solid Waste Management	
Carbon foot-print, Life Cycle Assessment, Impact of Pollutants on Ecology and Environment	
Environmental Engineering special emphasis to solid waste management	
Structural Engineering, Smart Materials, Acoustic Analysis	
Study on the nonlinear behaviour of structural component strengthened with FRP laminates	
Concrete	
Total	14

Department of Information Technology

Area of Research Field	Number of Vacancy
Network and financial security, Natural Language Processing, Wireless Networks	
Computer Vision and Information Security	
Artificial General Intelligence, Challenged Networks	
Mobile Networking, Computer Networks	
Biodiversity, Data Mining, Data Archiving	
Total	11

Department of Chemical Engineering

Area of Research Field	Number of Vacancy
Energy from Waste through Thermochemical and biochemical processes, CO ₂ Capture through photochemical processes, Microfluidic Reactors, Mathematical Modelling	
Advanced Membrane Separation Processes, Waste management, Waste water treatment, Environmental pollution control and remediation, Phytochemical isolation application	
Nano- materials, Hydrogen energy, Fuel cell, CO ₂ utilization	
Separation and Purification of Value- added- products; Generation of ultra- pure air; Composites for pharmaceutical waste- water treatment	
Waste Management; Sustainable Biomass Conversion; Catalysis; Reaction Engineering; Drying Technology; Bio-Fuel; Clean Energy	
Chemical Engg, Environmental Engg	
Fluid mechanics, transport phenomena, multiphase flows	

for sustainable development	
Bioindicators, Biomonitoring of air pollutants, Environmental remediation, Biofuel generation, Advanced extraction and Microwave assisted extraction of biomolecules	
Environment, Waste Water Treatment, Catalysis, Biofuel	
Nanomaterials, Nanocomposites Energy Storage; Waste Water Treatment	
Nano material fabrication and application Waste water treatment CO ₂ capture Smart coatings	
Total	35

Department of Production Engineering

Area of Research Field	Number of Vacancy
(i) Non -Traditional machining, (ii) Micro - machining, (iii) Hybrid machining Hybrid Micro- machining	
Production Management	
MCDM technique, Process optimization, Quality control, Soft computing techniques	
Industrial Engineering, Laser Material Processing, Micro Manufacturing	
Ergonomics	
Laser Beam Micro- machining, Laser beam Welding, Reverse Engineering, Manufacturing Management	
Total	15

Department of Power Engineering

Area of Research Field	Number of Vacancy
Control Systems, Real- time Distributed Systems Hardware- in- Loop Simulation	
Hydropower/ Aerodynamics	
Microfluidics, Heat Transfer, Energy and Surface Engineering	
Characterization of nano fuel	
High Voltage Engineering, Condition Monitoring, Fault Diagnosis, Renewable energy, Smart Grid	
Renewable Energy; Microgrid and Smart grid System; Power System Analysis; Application of Meta- heuristic Techniques in Renewable Based Energy Systems	
Power system economics, power bidding optimization, spot pricing in deregulated electricity market	
Heat Transfer, Microfluidics, Bioconvection, Magnetohydrodynamics, Phase change materials (PCM)	
Total	16

Department of Architecture

Area of Research Field	Number of Vacancy
Architectural Design and Theory	

Regional & City Planning, Transportation Planning, Cognitive mapping and allied application	
Architecture, Urban Design, Housing, Energy efficiency in Built Environment, E-governance	
Sustainability and Resource-efficiency in buildings, Landscape, Environment and Ecology	
Methodological Parametric Study Of Urban Transformations And Related Urban Developments	
Total	11

Department of Pharmaceutical Technology

Area of Research Field	Number of Vacancy
Formulation Designing	
Mechanistic pharmacology and toxicology of naturally occurring molecules.	
Traditional Medicine and Drug Discovery	
Drug delivery and drug targeting, Nano formulation and antisense technology	
Synthetic and Natural Product Chemistry	
Cheminformatics, QSAR and Molecular Modeling, Drug design	
Novel Drug Delivery System	
Anticancer Drug Design and Discovery, QSAR and Molecular Modeling	
Drug design and Discovery	
Magnetite Nanoparticles, Electrospinning; Drug Delivery: Formulation Development Macroemulsion / Nano emulsion; Solubility enhancement techniques; Nanotubes; Nanofibers; Transdermal drug delivery system; Nano-composites	
Total	25

Department of Electrical Engineering

Area of Research Field	Number of Vacancy
Signal/Image Processing, Conditioning Monitoring of Signal/Image Processing, Conditioning Monitoring of Electrical and Biomedical Systems	
Day lighting, Li-Fi, Indoor and outdoor lighting systems, Building energy simulation and analysis	

Renewable Energy conversion and microgrid control, Electrical machines, Drives and Power Electronics	
Control System, Robotics	
Smart Sensing & Instrumentation, Fraction order Control System, Biomedical Signal Processing	
Power Systems and High Voltage	
Control System	
Human Centric Lighting, Smart Lighting , Street Lighting	
Power System Planning in Distributed Generation	
Design and Analysis of Electrical Machine	
Power System performance, operations	
Nonlinear Control/Swarm Robotics	
Total	33

**Department of Food Technology and
Biochemical Engineering**

Area of Research Field	Number of Vacancy
Food Engineering (gamma irradiation, supercritical CO ₂ extraction, development of nutraceuticals, application of nutraceuticals in mitigating metabolic and neurodegenerative disorders, electronic nose applications in foods)	
Nano composite/ bioremediation/ analytical tool for food analysis / alternative antimicrobials/ food packaging	
Total	4

**Department of Electronics and
Telecommunication Engineering**

Area of Research Field	Number of Vacancy
Microwave and Antenna	
Artificial Intelligence and Cognitive Neuroscience	
Signal Processing	
Nanodevices and Low power VLSI circuits, Mobile Ad- hoc Networks (MANET), Wireless Sensor Networks (W SN), RFID and its Applications, Digital Watermarking and Data security, MEMs, NEMs and Gas sensors	
Wireless Communication IoT, Cognitive Radio, 5 G Networks, Intelligent Transport System	
Free Space Optical Communication	
Computer Vision Machine Learning	
Computer Vision, Pattern Recognition	
Communication Engineering, Signal Processing	

Microwave, Millimeter wave, Antenna, Nanoscale device and VLSI design	
Nano electronic Devices and Circuits	
Data Science and Artificial Intelligence	
Total	24

Department of Computer Science and Engineering

Area of Research Field	Number of Vacancy
AI, Machine Learning, Deep Learning, Data Science, Big data analytics	
Soft Computing, Pattern Recognition, Data Mining	
Computer Vision, Image Processing, Video Processing, Text Processing, Speech Processing, Sensor Data Processing	
Social Network Analysis, Social Media Data Analytics	
Natural Language Processing	
Bioinformatics	
Distributed Computing, Cloud Computing, Parallel Computing	
Internet of Things (IoT), Wireless Sensor Network (WSN), Cyber Physical System (CPS)	
Robotics, Computer Graphics	
Security	
Total	50

Department of Instrumentation and Electronics Engineering

Area of Research Field	Number of Vacancy
1. Analysis of Solar Data in view of Solar phenomenologies 2. Some study and analysis of Ischemic Brain stroke with Imaging processing techniques	
Cognitive Radio Network, Wireless Sensor Network	
Biomedical Image Processing, Solar Energy	
Photonics.	
Sensor development, Electronic nose and Electronic tongue, NIR Spectroscopy	
Electronic nose and Tongue, NIR and Raman Spectroscopy	
Total	9

Department of Construction Engineering	
Area of Research Field	Number of Vacancy
Concrete Technology, Geotechnical Engineering, Repair Rehabilitation Technique	
Highway and Geotechnical Engineering	
Geotechnical Engineering, Repair & Rehabilitation of structure.	
Repair Rehabilitation Technique/ Simulation Technique of road and Bridges	
Structural Engineering, Concrete Technology, Repair Rehabilitation Technique	
Structural Engineering, Concrete Technology, Repair Rehabilitation Technique	
Total	
Department of Metallurgical and Material Engineering	
Area of Research Field	Number of Vacancy
Corrosion, Energy Materials, Fuel Cell Battery, Computer Modeling	
Extractive Metallurgy	
Deformation and Characterization	
Nanomaterials & corrosion	
Total	
Department of Printing Engineering	
Area of Research Field	Number of Vacancy
Offset, Flexo and Gravure, Imaging Technology, Material Science, Quality Control in Printing, etc.	
Total	

