

JADAVPUR UNIVERSITY  
KOLKATA – 700032

**FACULTY OF ENGINEERING & TECHNOLOGY**  
(Notice No. FET/Ph.D./01/2018 Date 28.11.2018)

**ADMISSION TO THE Ph.D. (ENGINEERING AND PHARMACY) PROGRAMME  
FOR THE SESSION 2018-19**

Applications are invited from Indian national for admission to the Ph.D. (Engineering and Pharmacy) programme as per New Ph.D. Regulation 2018 under the Faculty Council of Engineering & Technology, Jadavpur University. Please note the following before fill up the online application form which is available from university web portal ([www.jaduniv.edu.in](http://www.jaduniv.edu.in)).

**Note:**

1. All applicants must have completed 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.
2. Candidates should apply online through the University website (<http://www.jaduniv.edu.in>) and it will be available throughout the year.
3. Candidates have to pay the application fees Rs.500/- (each Department) online through SBI Collect System using Credit Card / Debit Card / Net Banking from two working days after Form fill up.
4. After payment they have to submit the submission print out of online application along with a photocopy of online payment receipt downloaded from SBI after online payment and have to submit along with other requisite testimonials [i.e. self-attested photo copies of Mark-sheet & Certificates of Secondary, Higher Secondary, Graduation and Master Degree course, CSIR-NET/UGC-NET/GATE/GPAT/SET/QIP certificate (if any), SC/ST/OBC-A/OBC-B/PWD Certificate (if applicable)] and two (2) passport size photographs to the Office of the Principal Secretary, F.E.T.
5. Vacancies will be declared time to time and reservation policy will be considered as per Govt. of W.B. rule.
6. Syllabus as per New Ph.D. Regulation 2017 for Admission Test will be approved syllabus of the University as per UGC rule.
7. Application for Ph.D. (Engineering/Pharmacy Programme 2018-19 will be considered up to 20<sup>th</sup> December, 2018 and the Admission Test will be held tentatively at the 2<sup>nd</sup> week of January, 2019. CSIR-NET/UGC-NET/GATE/GPAT/SET/QIP qualified applicants will be appeared in separate Test/Interview for final selection.
8. Department wise intake of Ph.D. Programme given below.
9. **NO INSTITUTE SCHOLARSHIP IS OFFER.**

**Principal Secretary, FET**

## Intake and Research Area of Department for Ph.D. Registration Programme - 2018

Department	Area of the Research Field	Total Intake of the Department
<b>Instrumentation &amp; Electronics Engineering</b>	Electronic Olfaction, Analytical Instrumentation, Electronic Tongue	<b>14</b>
	Logic synthesis, embedded system	
	Intelligent Control, Computational Intelligence, Bio-informatics	
	Signal Processing, Control System	
	Filtering and estimation; Bio-medical instrumentation; Signal processing	
	Filtering and estimation; Bio-medical instrumentation; Control systems; Signal processing	
	Electronic Nose, Electronic Tongue, Pattern Recognition, Spectroscopic Instrumentation	
	Electronic Nose, Electronic Tongue, Pattern Recognition	
	Gas sensors and machine olfaction	
	Digital Signal Processing, Medical Imaging, Sensor Networks, Network Security	

<b>Production Engineering</b>	Non-Traditional Micro-machining Micro-surface Structuring Electrochemical Micro-machining Hybrid Micro-machining	<b>14</b>
	Production Engineering	
	Robotics	
	Robotics	
	Rough multi-criteria decision making methods, Data mining, Soft computing techniques	
	Non Traditional Machining, Laser Material Processing, Micro, Hybrid and Additive Manufacturing, Quality Engineering & Management, Reverse Engineering, Soft Computing & Manufacturing Management	
	Non-Traditional Micro-machining Hybrid Machining Technology	

	Additive Manufacturing Laser Material Processing Reverse Engineering	
	Non-Traditional Machining Wire EDM/ Micro EDM Laser Material Processing Hybrid Machining Robotics Reverse Engineering	
	Ergonomics	
	Laser Beam Micro-machining Laser beam Welding Reverse Engineering Manufacturing Management	
	Electro-chemical Discharge Machining (ECDM) Electro-Discharge Machining Micro-Machining	

<b>Food Technology &amp; Biochemical Engineering</b>	Fermentation Tech.	<b>10</b>
	Food Engineering, Nutraceuticals, Food Fortification	
	Green Technologies of food processing and preservation	
	Bio preservation of Food, Adulteration of Food, Plasma Sterilization, Nano Biotechnology	
	Biogenic synthesis of nanoparticles and application in packaging, alternative antimicrobial substance, catalysis and bioremediation.	
	Food Processing / Biochemical Engg.	
	Bioremediation, Enzyme Technology	

<b>Printing Engineering</b>	Printing Material Science, Surface Coating.	<b>4</b>
	Image Processing, Computer Vision, Packaging.	

<b>Mechanical Engineering</b>	Computational Solid Mechanics	<b>52</b>
	Vibration Analysis, Rotor Dynamics, Vibration Control	
	Thermo-fluid Science/ Materials Processing	
	Tribology	
	Turbulence, Nano-Fluid, Swirling Flows, Levelset Method	
	Pressure Vessel- Thermomechanical Analysis & Autofrettage	
	Tribology, Material characterization	
	Sustainable Development, Lean/Green Manufacturing, Waste Management, Quality Environment Energy and Safety Management Systems, Supply Chain Sustainability for SMEs, Circular Economy.	
	Applied Mechanics, Finite Element Methods, Composite Materials	
	Mechatronics and Electrohydraulic Control.	
	analytical & computational heat transfer, thermal therapy, design of solar collectors, flow through a micro-channel, fin-and-tube heat exchanger, heat transfer through porous medium, entropy generation, extended surface heat transfer, etc.	
	Vibration, Dynamics, Automobile Engg.	
	Computer Aided Optimization in Manufacturing Systems and Robotics	
	FEM, Mechanics Vibration	
	FEM, Mechanics Vibration	
	Reneable energy, gasification	
	Reliability and Quality Engineering	
	Air flow in diffuser, Glass Nanocomposites, Hydro Power	
	Semisolid forming of alloys, Flow through microchannels, Thermal analysis of power plants	
	Design	
	Fatigue Fracture Applied Mech	
	CFD	

<b>Electronics &amp;</b>	Microwave, Antenna	
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<b>Telecommunication Engineering</b>	Nano-devices and Low power VLSI circuits, Mobile Ad-hoc Networks (MANET), Wireless Sensor Networks (WSN), RFID and its Applications, Digital Watermarking and Data security, MEMs, NEMs and Gas sensors	<b>14</b>
	Signal processing, Architecture	
	Digital Image Processing	
	Microwave, Antenna, Matematerial	
	Microwave, Antenna	
	Communication, DSP	
	Error Control Coding and Information Security	
	Device	

<b>Metallurgical &amp; Material Engineering</b>	Corrosion, Fuel Cell Modeling Simulation	<b>15</b>
	Phase Transformation, Deformation, Fatigue, Fracture	
	Composite Materials, Nano-Materials, Welding	
	Extractive Metallurgy, Nano Biotechnology	
	Processing and Characterisation	

<b>Power Engineering</b>	Power System Optimization, Soft Computation, Renewable Integration	<b>7</b>
	Reactive Power Management with hybrid energy source; Microgrid optimization	
	Nanofluids, Heat Transfer	
	Conventional machining, Laser beam machining, welding and Soft computing	

<b>Pharmacy</b>	Anti-cancer Drug Design	<b>14</b>
	Pharmacy (Medicinal Chemistry & Natural Products)	
	Natural Product Research (Pharmacy)	
	Pharmacology & Toxicology Pharmacokinetics	
	Phytotherapy and Pharmacology Research Laboratory	
	Herbal Drug Research	
	Pharmacognosy	
	Pharmaceutics	
	Pharmaceutics	
	Experimental Design on Pharmaceutical	

	Formulation	
	Pharmaceutical Sciences- e.g., Dosage form designing, Colon Specific Drug Delivery, Prebiotics-Probiotics etc. & Tissue Engineering (wound healing).	
	Pharmaceutical Technology	

<b>Architecture</b>	Architecture, Urban Design/Planning	<b>15</b>
	Town & Regional Planning, Integrated Landuse & Traffic System, Transportation Planning	
	Housing, Urban Built Form, Conservation Planning Building Performance, Energy Efficiency	
	Architecture, Urban Design, Town Planning, Housing, Energy efficiency, E- Gov. Sustainable design	
	Architecture Urban & Landscape Studies Environment Sustainability	
	Methodological Study of Architecture, Housing & Urban Transformations & related Urban Developments from Urban Design viewpoint	
	Urban Microclimate & Human Biometeorological Approaches in Urban Planning	
	Architecture Urban Design Environmental Perception Cognition & Behavior Culture & Community Urbanism	

<b>Electrical Engg.</b>	Power system	<b>28</b>
	Control Systems, Robotics, Machine Learning	
	Electrical Machines and Drives Power system operation	
	Power System Planning, Peak Load Forecasting, and Renewable Energy Integration to Smart Grid.	
	High Voltage Engineering & Power System	
	Ferro-resonance in power system and machines. Development of semiconducting nano-composite materials for sensors	

	Wireless sensor and application Tomographic Sensor system	
	Electrical Drives, Power Electronics, Renewable Energy conversion, Reactive power compensation control, Smart grid and micro grid control	
	Estimation, Control of Aerospace System	

<b>Computer Science &amp; Engineering</b>	Data Mining, Deep Learning, Computational Biology, Soft Computing, Pattern Recognition and Big Data	<b>21</b>
	Soft Computing, Pattern Recognition, Image Processing, Big Data and Deep Learning, Remote Sensing	
	Machine Learning, Natural Language Processing	
	Natural Language Processing, Word sense Disambiguation, Text Mining	
	Pattern Recognition, Image Processing, and Machine Learning	
	Bioinformatics, Medical Image Analysis, OCR	
	Data Science, Wireless Sensor Network, Social Network Analysis	
	Locomotion in autonomous wheeled robots	
	Deep learning, Computer vision	
	Bioinformatics, Medical Image Analysis, OCR	
	Bioinformatics, Medical Image Analysis, OCR	

<b>Chemical Engg.</b>	Multiphase Bioreactors. Waste to Energy through thermo chemical and biochemical routes. Synergism of Probiotics and Prebiotics. PhphotobioreactorsMicrofluidic Bioreactors. Process Intensification, Heat & Mass Transfer. Nanotechnology, Electro-catalyst and photocatalyst and their application in ORR, fuel cell, hydrogen generation and conversion of carbon dioxide to valuable products. Industrial waste energy recovery using thermoelectric generator. Heterogeneous catalysis, Reaction Engineering, Vacuum Drying, Waste Valorization, Biofuel, Engine Performance and Emission Assessment. Environment Pollution Control. Mass transfer, Microwave assisted unit operations, Nanofluids, Catalysis and Chemical Reaction Engineering, Activated Carbon, Electrochemical Water Purification. Fluid Mechanics, Transport Phenomena. Environment Pollution Control, Waste Water treatment, Energy, Biofuel, Catalysis. Nanomaterials and Nanotechnology, Wastewater treatment, CO <sub>2</sub> Capture, Biofuel. Energy harvesting. Membrane Technology / Separation Process / Environmental Remediation.	<b>24</b>

<b>Information Technology</b>	Network Protocols, Mobility Management, 5G, Device-to-Device Communication, Cognitive Radio Networks, TCP	<b>9</b>
	Data Mining, Data storage, Bio Informatics, Biodiversity	
	Challenged Networks, ICT and its Applications, Universal Search and optimizations	
	Algorithms in the domain of Wireless Networks, Network Security, Bio Informatics, Software Engineering, Machine Intelligence	
	Signal Processing, Network Security, Speech/Singing Voice Synthesis, Emotion Analytics, Geospatial Analytics, Machine Intelligence	

<b>Civil Engineering</b>	Impact response and failure characteristics of laminated composite shells	<b>12</b>
	Geotechnical Engineering	
	SOIL MECHANICS AND FOUNDATION ENGINEERING	
	Environmental Engineering	
	Traffic and Transportation Engineering	



	Computational Mechanics	
	Computational Structural Engineering	
	Environmental Engineering and Management special emphasis to Solid waste management	
	Earthquake Engineering	
	Geotechnical Earthquake Engineering	

<b>Construction Engg.</b>	Structural Engineering. Structural Health Monitoring. Earthquake Engineering & Disaster Mitigation. Concrete Technology. Geotechnical Engineering. Highway Engineering. Geotechnical Engineering. Geotechnical In-Situ Test. Geo-Environmental Engineering. Geotechnical Earthquake Engineering. Steel Structure – Design Aspect. Heritage Structure. Concrete Micro-structure. Geo-polymer Concrete.	<b>10</b>
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