



# Defence Institute of Advanced Technology

(Deemed to be University Under Section 3 of UGC Act 1956), Girinagar, Pune

## Ph.D. Programmes- July- 2018 Batch

Applications are invited for admission to Ph.D. Programmes, as per description below.

### Introduction:

Defence Institute of Advanced Technology (DIAT) is Technological Institute of National repute for higher learning. The Institute imparts education and training in Advanced Technologies used for Tri-services, DRDO, DPSUs etc. DIAT found its roots in 1952, as a training institute has grown over the years into a premier teaching and research institute for DRDO and the Armed Forces.

The main focus of the institute is to evolve as an Innovative Unique Research University to develop indigenous contemporary defence related technologies and also to provide technological solutions to the Services. DIAT is committed to generate high quality and talented human resource in broad areas of Defence Technologies to cater the needs of DRDO, Armed Forces and other Defence establishments.

DIAT offers admission to PhD (full-time) in the frontier areas of Aerospace Engineering, Mechanical Engineering, Electronics Engineering, Computer Science & Engineering, Applied Physics, Applied Mathematics, Materials engineering and Applied Chemistry. Limited few Institute Fellowships are available.

### Department-wise areas of Research are as under:

Sr. No	Deptt.	Subject / Research Area	Approx. No. of Vacancies Category wise * in each Dept (With Institutional Fellowship)#			
			GEN	OBC	SC	ST
1	Materials Engg	Magnetic Materials, Sensors, Multifarious Shape Memory alloys, Thermo Mechanical Processing of Metallic Materials, Texture of Materials, Grain Boundary Engineering.	01	0	01	0
2	Aerospace Engg	Aerodynamics, Fluid Mechanics	0	01	0	0
3	Applied Mathematics	Modelling and Simulation, Numerical Analysis / Methods (Computational and Theoretical Aspects), Image Processing, Theoretical / Computational Fluid Dynamics (Mechanics), Cryptography.	01	01	0	01
4	Mechanical Engg	Functionally Graded Structure, Damages in FRP Composites, CFD, Fluid Mechanics, Composite Structures, Repairing Technology, FEA, Fracture Mechanics.	01	02	0	0
5	Computer Science & Engg.	Network Security, Game Theory, Fault Tolerant Computing, Hyper spectral imaging, Multimedia Forensics steganography, Malware analysis, Biometric Video Surveillance, Cyber Security.	01	0	0	0
6	Electronics Engg	Radar / Array Signal Processing, Microwave, RF IC Design, Radar System Design, Antenna, EMI/EMC/EMP, DSP.	01	0	0	0
7	Applied Physics	Application of Nanomaterials /Sensors / Photovoltaics / Solar Cells.	01	0	0	0
8	Applied Chemistry	Metal chalcogenides, Quantum Dots, Metal/Polymer Nanocomposite, Organometallic Chemistry and Coordination Chemistry, Nanotechnology for defence applications, Nano fluids, Nano inks, Organic Synthesis Energetic Materials, Organic-	02	0	01	0

		Inorganic Hybrid materials, Mesoporous materials, Self-assembly, Functional Organic Nanocrystals, Materials for Energy Application, Catalysis, Nanocomposites.				
	<b>Total Vacancies</b>		<b>08</b>	<b>04</b>	<b>02</b>	<b>01</b>

**\* The number of vacancies is only indicative and DIAT reserves the right in this matter.**

**In addition to the above, Candidates with CSIR, DST, UGC or any other National fellowship / scholarship available to them are also eligible to apply for Ph. D admission in any subject area of the concerned deptt as per description below.**

Sr. No	Department	Subject Area
1	Applied Chemistry	Nanochemistry of High Energy Materials, Chemistry of N-molecule, Quantum dots, Organo chalcogen, Nano Ink and Nano fluid for energy application, Ionic Liquids, Green Chemistry, Membranes, Energetic Materials, Combustion Science for Defence Application, Organic Synthesis, Nano & High Energetic Materials and Plasticizer for Propellant Technology, Organic-Inorganic Hybrid Nanomaterials, Self-assembly, Mesoporous Materials, functional organic Nanocrystals and Properties, Opto-electronic Devices.
2	Applied Mathematics	Modelling and Simulation, Numerical Analysis / Methods (Computational and Theoretical Aspects of Finite Element and Domain Decomposition Methods), Image Processing, Theoretical / Computational Fluid Dynamics (Mechanics), Cryptography.
3	Applied Physics	Fourier Optical Signal Processing Holography, Optical Sensors & Systems, Micro fluidic devices & Sensors, Solar Cells, Nanocarbon, Metamaterials, EMI Shields, Nanocomposites, Pulsed pressure effects. Nanomaterials for sensors, Drug Delivery & shielding applications, Probe Microscopy, EMI, Sensors, Optical Sensors and Systems, Photonics.
4	Computer Science & Engg.	CPS, Data Analytics, IOT, Object Oriented Analysis and Design, Trusted Computing, Cryptography, Multimedia Security, Digital Forensics, Data Mining, Machine learning.
5	Electronics Engg.	Antenna, Microwave, Radar, Radar Signal Processing, RF System Design, Digital Filter Implementation in FPGA and EMI/EMC
6	Materials Engg.	Magnetic Materials Ferrites, Shape memory alloys, Dielectric Materials, Energy Strange materials, Biomaterials, Small Angle X-Ray Scattering studies of polymer blends and nano composites for energy harvesting, Polymer nanocomposite for energy harvesting, Thermo Mechanical Processing of Metallic Materials Texture, 3-D Printing of metals & Alloys, friction stir welding/processing.
7	Mechanical Engg.	Mechanical behaviour, Tribology, Macro/micro/Nano Indentation, Composite Materials, Micro Machining, Coating, CFD, Fluid Mechanics, Functionally Graded Structure, Damages in FRP Composites, Fracture Mechanics.
8	Aerospace Engg.	Flight Guidance and Control

### **Eligibility:**

#### **a) Qualification**

- A candidate, seeking admission to the Ph.D. program, shall be required to have passed the qualifying examination securing at least 55% marks or equivalent CGPA/DGPA. A relaxation of 5 % of marks may be allowed for those belonging to SC/ST/OBC (non creamy-layer) / PWD - (Divyang) categories. The qualifying degrees are:-
  - Master of Engineering/Master of Technology (or equivalent) for Ph.D. in Engineering/Science.
  - Master in Science (M.Sc. or equivalent) for Ph.D. in Science
- A candidate who has passed the qualifying examination with the requisite percentage of marks as prescribed above and who fulfill the following requirement may be considered for admission to the Ph.D.

programme:-

- a) Qualified in a national level test such as, CSIR/UGC NET (Fellowship), Graduate Aptitude Test for Engineering (GATE), Rajiv Gandhi National fellowship, subject wise and category wise GATE/NET (Fellowship) cut off will be decided by DIAT.

## **b) Age limit**

Not above 30 years as on July 1, 2018.

Relaxations as per GOI rules apply to SC / ST / OBC / PH applicants.

### **Note:-**

- The Institute shall implement the reservation policy in Ph.D. admission in accordance with relevant act of Parliament being in-force from the time.
- A physically Handicapped SC/ST/OBC candidate shall not get double benefit of being an SC/ST/OBC as also a PWD candidate.

## **Selection:**

Admission to Ph.D. will be based on the performance in the entrance exam (written test) conducted by the department concerned followed by a personal interview.

## **Financial Assistance:**

- a) The selected Ph.D. candidates against this admission notice, admitted as full-time Ph.D. students will be provided financial assistance as per Institute rules, in force from time to time. The Ph.D. students (who are provided Institute fellowship) will be required to assist in research and teaching activities for a maximum of 10 hours per week in addition to their own duties.
- b) In addition to the Ph.D. scholarship, such candidates would also be entitled for contingency grant (presently Rs. 15,000/- per year) in accordance with the decisions of the Institute.

## **Boarding / Lodging:**

Accommodation and mess facilities are available in the PhD Scholar Hostel on payment basis. However, due to very limited rooms in PhD Scholar Hostel, it may or may not be possible to provide PhD Scholar Hostel accommodation to all the students. The present monthly charge towards boarding and lodging is ₹ 7000/- (subject to revision). A security deposit of ₹ 20,000/- would need to be paid to Hostel Office.

## **How to Apply:**

Candidates have to apply online through the website, <http://www.diat.ac.in> . Application fee of ₹.500/- for General & OBC Category and ₹ 250/- for Women and reserved category (SC/ST/PWD) candidates per programme, is required to be paid either online (through State Bank Collect) or by Demand Draft drawn in favour of Vice Chancellor, DIAT, Pune, payable at Pune. The application has to be uploaded as per the instructions provided in the website, <http://www.diat.ac.in>. A print out of the application, acknowledgement generated by the system after upload of application, has to be forwarded in a sealed envelope, super scribed "Application for Admission to PhD Programme in the Department of \_\_\_\_\_" to the Joint Registrar (Academics), Defence Institute of Advanced Technology, Pune 411025 along with online generated receipt / Demand Draft and self certified copies of mark lists, certificates and other testimonials. **These documents should reach DIAT latest by 20 April 2018** (Through Speed Post only). Postal delay will not be entertained. Application will be processed only on receipt of the acknowledgement with online generated receipt / Demand Draft. Also, Candidates seeking admission to more than one Department need to apply separately.

## **General Information:**

- Since the applications may be short listed, mere possessing of the prescribed qualifications would not entitle a person to be called for test/interview. The Institute may restrict the number of candidates to be called for test / interview to a reasonable limit, on the basis of qualifications / marks higher than that of the minimum prescribed in the advertisement.
- For short listing of candidates, the department screening committee may decide subject-wise and category-wise GATE/NET Cut off.
- Application once made will not be allowed to be withdrawn and fees once paid will not be refunded on any count nor can it be held in reserve for any other admission process
- Canvassing in any form will be a disqualification. Postal delay shall not be entertained.
- No correspondence will be entertained in respect of advertisement, interview, selection etc. The list of Shortlisted candidate will be displayed on <http://www.diat.ac.in> website alongwith other information viz. date of Interview / Written Test / Result. The candidates are requested to check the DIAT (DU) Website <http://www.diat.ac.in> for related information from time to time.

## **Course Fee and Other Charges:**

Selected candidates for the Ph.D programmes are required to pay Semester Fee @ ₹.25, 000/- per semester (for Gen & OBC) and @ ₹ 15,000/- (for SC & ST) payable immediately on joining and a caution deposit (refundable at the end of the Programme less dues if any) of ₹ 10,000/-, commencing from July 2018.

## **Important Dates:**

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| ➤ The online application process will start on     | 20 March 2018                                      |
| ➤ Last Date for accepting online application form  | 13 Apr 2018  |
| ➤ Last Date of receipt of Hard copy of application | 20 Apr 2018  |
| ➤ Tentative Date of Interview / Written Test       | 3 <sup>rd</sup> / 4 <sup>th</sup> week of May 2018 |
| ➤ Tentative date of commencement of the programme  | 1 <sup>st</sup> Week of July 2018                  |
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