National Institute of Technology, Uttarakhand

Information brochure for full time and Part-Time PhD for Odd Semester 2024 under "Visvesvaraya PhD scheme" Sponsored by MEITY, Govt. of India

Applications are invited for admission to Ph.D. Programme **Full Time and Part Time Ph.D under Visvesvaraya Ph.D. Scheme sponsored by MEITY for Odd** Semester-2024 in the Department of Electronics Engineering, Department of Electrical Engineering and Department of Computer Science & Engineering at NIT Uttarakhand.

Salient features of the Visvesvaraya PhD Scheme for Electronics and IT: Phase-II

A. Full-Time PhD Candidates

- ❖ The full-time candidates would be enrolled at the supported institution (NIT Uttarakhand) under the scheme as per the procedural norms and 'Terms & Conditions' of that institution as well as the Terms & Condition of the Visvesvaraya Ph.D. scheme: Phase -II
- ❖ Financial support provided to each Full Time PhD candidate is as mentioned below.
  - ▪ Fellowship: Revised to Rs 38,750/- per month (I & II year); Rs 43,750/- (III to V year).
  - ▪ Research Contingency Grant Support: An amount of Rs. 1,20,000/Year/Full-time PhD candidate for support duration of Ph.D. candidate.
  - ▪ Reimbursement of Rent for those Full Time Ph.D. candidates who are not provided hostel/institute accommodation: The ceiling for Reimbursement of Rent would be 24%, 16%, and 8% of the fellowship amount as per the Government of India norms for class X, Y or Z cities respectively.
- ❖ One-time support for attending International Conference for selected candidates fulfilling eligibility criteria based on the guidelines to be provided in due course.
- ❖ One-time support for visit to Labs abroad for selected candidates fulfilling eligibility criteria based on the guidelines to be provided in due course.

B. Part-Time PhD Candidates

The Part-time PhD candidate is eligible to receive a One-time incentive of Rs. 3.00 Lakhs on successful completion of PhD and required formalities with the institution and the scheme; such as submission of requisite completion documents, claims, etc. through the institution to Digital India Corporation.

For more details regarding the Visvesvaraya Ph.D. scheme, interested candidates may explore the webpage: **https://phd.digitalindiacorporation.in**

Eligibility: *A candidate is eligible for registration to Ph.D. Program if he/she satisfies the following conditions:*
A Master's degree in the concerned or an allied subject with a minimum 6.5 CGPA or 60% for General/OBC and 6.0 CGPA or 55% for SC/ST/PWD candidate and GATE / NET (CSIR/UGC/LS) in the concerned subject or discipline.

<p align="center">Or</p>

A minimum of 6.5 CGPA or 60% for General/OBC and 6.0 CGPA or 55% for SC/ST/PWD at Bachelors level with at least 55% marks at Master's level and GATE / NET (CSIR/UGC/LS) in the concerned subject or discipline.

Note: GATE/NET (CSIR/UGC/LS) in the concerned subject or discipline is mandatory for full-time Ph.D Program.

However, relaxation from the requirement of GATE/NET will be given only for admission into part time Ph.D. Program, for part time candidate candidates with minimum two years of relevant experience in reputed Academic/Industrial Organizations or Govt. funded Research Projects. Minimum 2 year serving experience is mandatory (spell of one contract should be minimum 6 months) and the candidate should be in service at the time of application. NOC in case of regular serving candidate is mandatory with the application form.

However, fees structure, essential qualifications, other terms & conditions will be same as per Ordinances of the Institute.

Application form, Guidelines, Terms & Conditions are available at NITUK website **www.nituk.ac.in**

Department-wise vacancy for admission in Ph.D. Programme under Visvesvaraya Ph.D Scheme:

S. No	Department	Number of Seats (Total : 06[#])
1.	ECE	Full-Time – 02* Part-time - 01
2.	CSE	Full-Time – 01 Part-time - 01
3.	EEE	Full-Time – 01

[#]**Reservation roster is applicable as per Gov. of India norms.**
*To work in the Chip to Startup (C2S) funded project

Minimum Qualification(s) required for shortlisting of Ph.D applications:

Department	Minimum Educational Qualification
CSE	B.E./B. Tech. in Computer Science and Engineering/Computer engineering/Information Technology/Communication and Computer Engineering/Electronics and Communication engineering/Electronics Engineering/Electrical Engineering /Artificial Intelligence/Cyber Security/Machine Learning/ or other relevant Engineering and Technology disciplines. and M.E./M.Tech./M.S. in Computer Science and Engineering/Software engineering / Information Technology/Computer Applications/ Information Security/IoT/Robotics/Data Science/Artificial Intelligence/Cyber Security/Machine Learning or other relevant Engineering and Technology disciplines. or MCA/MSc (in relevant discipline)
ECE	B.E./B. Tech. and M. Tech.in Electrical/ Electronics/ Computer/ Communication/ Telecommunication/ Instrumentation/ Control/ Microelectronics/Signal Processing or equivalent discipline consistent with research areas of the department, MSc in Physics or Electronics with valid GATE Score.
EEE	M.E./M.Tech. or equivalent degree in respective & relevant Engineering disciplines

Department-wise Areas of Research for admission in Ph.D. Programme under Visvesvaraya fellowship:

Department	Area of Research
	1. Cryptography and Multimedia Data Security, Secret Sharing Schemes, Machine Learning.

CSE	2. Cryptography, Cryptographic Key Establishment, Secure Multicasting, Attribute Based Cryptosystem, Smart Grid.
	3. Computer Networks, Secure Real Time System, Network Security, Vehicular and Mobile Ad-hoc network.
	4. Cryptology and Information Security, Logical Analysis of Data, Machine Learning.
ECE	1. Biomedical Signal and Image Processing, Speech Signal Processing, Signal Processing and AI/DL/ML Algorithms for Communications and VLSI Design**
	2. Signal Processing, Robust Control, Robotics and Computer Vision
	3. Optical Communication and Sensors, Optoelectronics Devices & Interconnects, 4. AI/ML based sensors
	5. Planar Antennas, THz mmwave Applications, Remote Sensing,
	6. VLSI and Microelectronics, 3D ICs, Low Power Circuit Design**
	7. Device Circuit Interaction of Novel Semiconductor Devices, FeFET for Inmemory Computation and Neuromorphic computing, Self-Heating Effects on Novel Semiconductor Devices**
	8. Microelectronics & VLSI Design: Modeling and Simulation of CMOS Nanoscale Device, Thermal Analysis of Semiconductor Devices, AI & ML based Nanoscale Device Modeling**
	9. Circularly Polarized Patch Antennas, Beamforming Antennas, THz Antennas
EEE	1. Reliability Engineering, Power System Analysis, Renewable Energy, Failure Analysis, System Design, Power System Restructuring /Deregulation, Electricity Market, Distributed Energy Resources and Smart Grid
	2. Control Scheme for Various Applications in Power System, Control Scheme for Various Applications in Power Electronics Such as Load Frequency Control of Multi Interconnected Area for Hybrid Micro Grid System, Fractional Control System.
	3. Distribution System Planning, Power System Stability, Renewable and Energy storge Integration Issues in Microgrid and distribution system
	4. Power Electronics and Electric Drives, Renewable Energy System, Electric Vehicle.
	5. Protection of conventional transmission line and distribution line, Protection of renewable energy (Solar, wind) integrated based power system, Protection and control of Microgrid system.
	6. Single-Phase and Three-Phase Microgrids, Power Quality Improvement of the Grid connected renewable energy sources, Water pumping system, Power electronics and drives.
	7. Electric Drives, DC Microgrid, Power Electronics and Electric Vehicle.
	8. Application of IoT, Data analytics methodologies, Renewable energy systems and battery management systems for electric vehicles.
	9. Autonomous vehicles, Electric vehicles, Renewable energy and power electronics.
	10. Power distribution systems, power system analysis, Deregulated power systems & power pricing, Application of block chain technology in electrical systems.

**To work in the Chip to Startup (C2S) funded project

Selection Procedure:
Whole selection process will be through offline (physical) mode. The shortlisted candidates will be called for written test. There will be objective type questions as per GATE/NET syllabus. The candidate who secures at least 40% marks in the written test will be shortlisted for online/offline interview. **List of shortlisted candidates for written test and Interview schedule will be displayed on Institute website www.nituk.ac.in separately. No separate letter/communication will be made to any individual for written test/Interview. Candidates are advised to visit the Institute website regularly in this regard.**

For all other details and last date of submission of application form kindly go through the information brochure for PhD. Admission updated on institute Website against Advertisement for ODD Semester 2024.