



# राष्ट्रीय प्रौद्योगिकी संस्थान अगर्तला

## National Institute of Technology Agartala

OFFICE OF THE DEAN ACADEMIC

F.NITA/5.(6-Acad)/Ph.D/Admn/2024/Jan/A-1385

Dated- 15 /11/2023

### CORRIGENDUM

**Sub:- Broad area of research for admission to Ph.D Programme at NIT Agartala for January-June 2024, academic session**

In reference to the notification of this office vide F.NITA/5.(6-Acad)/Ph.D/Admn/2024/Jan/A-1381, dated 10/11/2023, the broad area of research against different Academic Departments may be read as below:

Sl. No.	DEPARTMENT	Broad area of research
1.	Bio Engineering	Biotechnology, Biochemical Engineering, Environmental Engineering; Industrial waste water treatment; Process Intensification; Mathematical modelling; Fluid Mechanics, Computational Fluid mechanics, Heat and Mass Transfer, Fuel & combustion, Environment, Energy, Safety, Waste management, Computational Biology.
2.	Chemical Engineering	Environmental Engineering, Waste water treatment, Adsorption, Bioremediation, Optimization and Design, Computational Fluid Dynamics, Multiphase Flow phenomena, Petroleum & Refinery Engg., Transport Phenomena, Energy, Environment, Chemical & Bio-Chemical Engineering, Microalgae and Cyanobacteria based Biofuels and Bioproducts, Agriculture Waste Management, Metabolic Network Analysis for Biological Systems, Systems Biology, Fermentation Technology. Environmental Engineering and Pollution Control, Biotechnology, Electrochemical Technologies, Nanotechnology, Materials Engineering, Polymer Engineering, Reaction Engineering & Catalysis, Renewable Energy & Biofuels, Energy and Fuel Technology, Sustainable Engineering, Waste Utilization, and Biomass valorization, Water and wastewater treatment; Groundwater and wastewater treatment by membrane and adsorption processes; Utilization of solid waste, Membrane distillation; Assessment of groundwater and surface water quality, Arsenic removal by membrane processes.
3.	Civil Engineering	Quality & treatment of water & waste water; Heavy metal removal; solid waste management; ecology; Adsorption modeling; Bio composite; Bio fuel generation; Remote sensing & GIS; membrane filtration; anaerobic design; composting; Dynamic response & stability; Anaerobic Digestion; Pre-treatment technology; Life Cycle Analysis; In-Situ Bio methanation; Power-to-X; Sustainable Waste to Energy technologies; Geotechnical Engineering; Field of Transportation Engineering; Water Resource Engineering; Structural Engineering; Liquefaction; Landslide; Slope stability; Geo-environmental study and seismology; Structural Dynamics and EQ Engg; Earthquake Geotechnical Engg; Building Materials and Structures; Pavement materials; Pavement analysis and design; Subgrade stabilization; Seismic performance evaluation of RC structures; Seismic performance evaluation of Masonry structures; Concrete performance against corrosion; Retrofitting and Rehabilitation of Structures; High performance concrete; Concrete Durability; Geopolymer concrete; Non-destructive Evaluation; Pavement/ Soil; Structural rehabilitation/ Strengthening; Hydro informatics/AI and Data science in water resources development; Environmental Nanotechnology waste water treatment.





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4.	Computer Science & Engineering	Cryptography; Steganography; Data Privacy; Cyber Security; Cyber Analytics; Network Security; Blockchain; Cloud Computing; Computer Network; Wireless Sensor Network; Software Defined Network; IoT; MANET; VANET; Artificial Intelligence; Information Retrieval; Natural Language Processing; Machine Learning; Computer Vision; Computational Social Science; Social Computing; Pattern Recognition; Operations Research; Image Processing; Computational Biology; Evolutionary Computation; Networks and Optimization; Hybrid Intelligent System; Mobile Robot Navigation; Search Engine Optimization; Data Analytics and Decision making.
5.	Electrical Engineering	Optoelectronics Instrumentation; Industrial Instrumentation; Solid State Lasers and Nonlinear-optics; Fiber Optic Sensors; Integrated Photonic Devices; Fibre optics Communications; Power Systems; High Voltage Engg; Energy & Renewable power; Distributed power generation; Hybrid power system; Energy conservation; Power system planning under smart grid; Demand response; Electric Monility; Application of Evolutionary Techniques to Deregulated Power system; Power quality; Energy efficient data centers; frequency conversion; Nonlinear optics; Laser & nonlinear optics; Surface Plasmon based sensors & Devices; Multi level inverter topologies; Harmonic elimination techniques; Modular multi-level converter for HVDC application; Power electrics application to renewables; Electric vehicle.
6.	Electronics & Communication Engineering	Image Processing; Microwaves and Antennas; VLSI Design and Synthesis; Control and Instrumentation; Bio impedance and signal Analysis; Device and material Characterization; Microwave circuits and Antennas, Metamaterial; Superstate; VLSI Semiconductor Device; Nanoelectronics; Optoelectronics Devices; Nanotechnology; VLSI; Hardware Security; Network-on-Chip; Electronic Design Automation (VLSI Design).
7.	Electronics & Instrumentation Engineering	Optics & Photonics; Flexible and wearable electronics; IoT; Chemical and Bio Sensors; AI and ML; Sensors & transducer; Instrumentation and Measurement; Embeded system; Robotics; Agricultural Electronics; Medical Signal and Image Processing; Medical Instrumentation and AI in healthcare.
8.	Mechanical Engineering	Sustainable energy; Tribology; Bio Tribology; Phase Engine Heat transfer (Boiling & condensation); Refrigeration & Air Conditioning; Air Conditioning; Energy system Analysis; Flow Boiling in Horizontal tube; Fluidflow & Heat transfer in microchannel; Alternative Fuels; Hydrodynamics; Manufacturing Technology; IC engine Alt. fuel and based stratcques in IC engine; M00P-IC engine; IC engine; Alt. fuel; Welding Analysis; Composite Materials; Heat transfer; Multiphase flow; CFD; Design Optimization; CAD; Advanced Composites; Advance Manufacturing system; Robotics; Optimization Non-traditional machining.
9.	Production Engineering	Foundry-Forging; SG Iron; Steel; Al alloy based composite materials; Grain refinement; Manufacturing Technology; Multi Criteria Decision Making (MCDM); Case Based Reasoning (CBR); Advanced Fluidics; Production and Operations management; Non-traditional machining; Financial management; Tribology of Bearings; Asset Management; Machining Technology, Decision Making; Plant Maintenance; Casting; Welding and soft computational approaches.
10.	Chemistry	Synthetic Organic Chemistry, Synthetic Inorganic Chemistry, Organometallic Chemistry, Coordination Chemistry, Nanoscience (carbon and metal nanoparticles) Applications in water purification; biosensors; solar cells.






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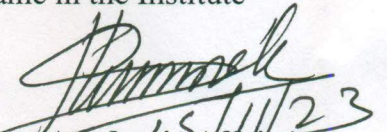
11.	Mathematics	Operations Research; Inventory Control; Transportation Problem; Fuzzy, Uncertainty Optimization; Optimization; Multi Criteria Decision Making; Metaheuristics; Waste Recycling; Topology; Mathematical Modelling; Biomathematics; Fuzzy Mathematics; Graph Theory; Linear Algebra; Quantum Computing.
12.	Physics	Liquid Crystal; Biomedical Sensors for Noninvasive Disease Monitoring; Solar Cell; Photoelectrochemical Cell; Photodetectors; Low Dimensional Nanostructures (0D, 1D, 2D); Growth and Applications in Electronic and Optoelectronic Devices; Semiconductor physics; Application of low dimensional materials for green energy and sustainable environment; Quantum field theory; Experimental study of Sheath Instability during Multiple Double Layer formations in RF & DC Plasmas; Experimental study of self-organization and nonlinear dynamics of Space Charge Structure Formations in Glow Discharge & RF Plasmas; Multiferroic; Theoretical Physics; Experimental Condensed Matter Physics; Thin film; Nanotechnology.
13.	Management, Humanities & Social Sciences	Management; English Social Sciences, Sociology and Economic Geography, Economics, Economics and Rural Management/ Development, Sociology and Geography/ Economic Geography.

**N.B.: All other information and contents in the above stated notification remains unchanged.**

  
15/11/23  
(Prof. Swapan Bhaumik)  
Dean (Academic Affairs)

Copy to:

1. PS to the Director, NITA for kind information of the Director.
2. All Deans, for kind information.
3. The Registrar, NITA, for kind information.
4. All Head of Academic Departments, for kind information and necessary action.
5. Faculty In-charge, MIS, for kind information and necessary action.
6. System Administrator, NITA, with a request to upload the same in the Institute website.

  
15/11/23  
Dean (Academic Affairs)  
NIT Agartala