राष्ट्रीय प्रौद्योगिकी संस्थान नागालैंड
NATIONAL INSTITUTE OF TECHNOLOGY NAGALAND
Chumukedima - 797103
Nagaland

Ref.No. NIT-N/ADVT/Research/0003/2026 dated 10/11/2026

A. Ph.D. PROGRAMME

Applications are invited from qualified candidates for admission to the Ph.D. programme (Full-Time / Part-Time) in the disciplines of CE, EEE, ECE, CSE, EIE, ME, and Science &Humanities* (Mathematics, Physics, Chemistry, and Social Science), Integrated Ph.D. program, and Interdisciplinary Research (IR) in Engineering Departments. The Departments and the Faculty Research Areas in which the following Programs will be offered are listed below

*NOTE: For the current admission session, applications to the **Full-Time Ph.D. Programme** in the Department of Science and Humanities (S&H) shall be restricted to candidates holding valid fellowship awards from recognized external funding agencies, such as DST–INSPIRE Fellowship, UGC–NET JRF, Joint CSIR–UGC NET JRF, National Fellowship for Scheduled Tribe Students (NFST), National Fellowship for Scheduled Caste Students (NFSC), National Fellowship for OBC Students (NF-OBC), NBHM Ph.D. Scholarship, ICSSR Doctoral Fellowship, or any other recognized external fellowship scheme, subject to applicable eligibility criteria and verification of fellowship entitlement. **Candidates admitted under this advertisement shall not be eligible for Institute Fellowship at any stage of their Ph.D. programme, including in the event of expiry, discontinuation, or withdrawal of their external fellowship, until the completion of their Ph.D. degree.** Furthermore, **admissions to the Part-Time Ph.D. Programme in the Department of S&H shall not be offered under the present advertisement.**

Sl. No.	Department	Faculty & Designation	Specialization / Area of Research	Eligible Disciplines
1	Civil Engineering	Dr.Nzanthung Ngullie Assistant Professor	Sustainable Infrastructure & Environmental Planning, Municipal Solid Waste Management & Resource Recovery, Waste Recycling & Utilization in Sustainable Infrastructure Development, GIS-based Spatial Analysis & AI/ML based Modelling, Life Cycle Assessment (LCA) & Environmental Impact Assessment (EIA), Water Supply Engineering & Sustainable Water Resource Management.	B. Tech. in Civil Engineering, M. Tech. in relevant discipline
		Dr.Pankaj Kumar Assistant Professor	Steel and Reinforced Concrete Structures; Steel–Concrete Composite Structures and their Connections; Adhesive Bonding in Structural	

			Applications; Finite Element Modelling and Analysis; Soil–Structure Interaction; Sustainable Concrete and Waste Material Utilization; Concrete Microstructure and Durability; Structural Health Monitoring, Assessment, Rehabilitation / Retrofitting.	
		Dr. V. Guru Prathap Reddy Assistant Professor	Structural Health Monitoring, Supplementary Cementitious Materials, Durability, Service life of Structures, Composite materials, Cold formed Steel.	
		Dr. Dhanesh Sing Das Assistant Professor	Rainfall-Induced Landslides and Slope Stability, Problematic Soils and Clay Mineralogy, Sustainable Ground Improvement and Soil Stabilization, Rockfall Hazard Assessment and Protection Systems, Clay-Based Barriers, liners and Geoenvironmental Engineering, Urban Flood Mitigation and Climate-Resilient Geotechnical Engineering.	
2	Computer Science and Engineering	Dr. Themrichon Tuithung, Professor	Image and video processing, Information Security, NLP	B. Tech./B.E., M. Tech./ M.E in Engineering/ Technology or Equivalent in Computer Science / Information Technology and Allied Branches.
		Dr. Shouvik Dey, Associate Professor	Blockchain Technology, Agentic AI	
		Dr. J. Arul Valan, Assistant Professor	Agentic Intelligence, Intelligent Bio-Printing, Computational Healthcare, Personalized Intelligent Systems, Computational Agriculture and Biosciences	
		Dr. Arambam Neelima, Assistant Professor	Information Security, Image and Video Processing, NLP, Sematic Communication, Post Quantum Cryptography, Biomedical Image Analysis, Multimedia Hashing, Computer Vision	
		Dr. Dilwar Hussain Mazumder, Assistant Professor	Data Analytics, Bioinformatics, Disease Prediction, Drug Discovery, Drug Side Effect Prediction, AI and LLM hallucination prediction, Application of E-nose (IoT sensor arrays) in healthcare, agriculture and allied domains.	
		Dr.Nagaraju Baydeti, Assistant Professor	Sentiment Analysis, Recommender Systems, Social Network Analysis, Wireless Sensor Networks, Edge Computing, Internet of Things	
		Dr. Lithungo K Murry, Assistant Professor	Wireless Communication, Localization of Victims during Disaster, Edge/ D2D	

			Computing and Communication – Emergency Response, Cellular Communication, Internet of Things, Environmental Sensing for Landslide using Drone (LiDAR)/ IoT/ GIS, Precision Agriculture Using Drone/ IoT/ Edge. Disaster Route Optimisation using Drone/ GIS.	
		Dr. Sibesh Lodh, Assistant Professor	Network Security, Wireless Sensor Networks, Internet of Things	
3	Electrical and Electronics Engineering	Dr. Dipu Sarkar Associate Professor	AI-Based Optimization of Power System Planning and Restructuring: Integrating EV Charging Station and SVC Placement with Distribution Automation	B.E./B. Tech., M.E./M.Tech. in Electrical and Electronics, Electronics and Communication, Electronics and Instrumentation Engineering equivalent/relevant discipline.
		Dr. Dushmanta Kumar Das Associate Professor	Control System, Optimization, Estimation, Power system Control and Optimization, Smart Grid, Converter Design and Control, Instrumentation, Machine Learning, Robotics	
		Dr. D. Ganga Assistant Professor	Machine Learning / Deep Learning for Predictive Maintenance of Machines, AI-IoT-Enabled Smart Grid Resilience, Optimization and Energy Management, Intelligent Transportation Systems, Autonomous Robotic Systems, Vehicular Networks, Electric Vehicles, Smart Charging and Vehicle-to-Grid Scheduling, Drone-based Surveillance, Energy-efficient Propulsion and Battery Management, Solar and Wind Systems, Micro-Grids, Digital Twins, Industrial Internet of Things, Edge AI	
		Dr. B. Shakila Assistant Professor	Electric Vehicles: PEV/PHEV integration in Smart Grid, Demand side Management and Demand response, Fault Analysis, Renewable Energy Systems: Forecasting / Predictive analytics, Artificial Intelligence for Health Care Systems, Nanostructures, MEMS / NEMS Energy Harvesters	
		Dr. M. Prakash Assistant Professor	Micro Electro Mechanical Systems (MEMS), MEMS / NEMS Energy Harvesters, AI/ML-based Bio-Medical Applications, Solar Cell, Thin Films, Nano Structures, High Power Devices, Micro grids and Smart Grids, AI /ML, Block Chain applications in Electrical Engineering.	
		Dr. Swaraj Banerjee Assistant Professor	Power Systems, Electric Vehicles, Power Electronics Restructured Power Systems, Power System Economics	
4	Electronics and Communication Engineering	Dr.Debadatta Pati Associate Professor	Speech Processing, Image Processing, Multilingual Speaker Recognition and Humans Pattern Recognition	B.E/B.Tech., M.E/M.Tech in Electronics and Communication Engineering, Electrical Engineering, Instrumentation
		Dr. P Chinnamuthu Associate Professor	Supercapacitors, HER, OER, and Advanced Energy Storage, Bioelectronics and Wearable Healthcare Devices, Optoelectronic Devices, Gas	

			Sensors and Biosensors, ReRAM and Neuromorphic Computing, EMI Shielding and Functional Nanocomposites	Engineering, Nanotechnology and Allied Branches.
		Dr. N. Khelchand Singh Assistant Professor	Supercapacitors, HER, OER, and Advanced Energy Storage, Bioelectronics and Wearable Healthcare Devices, Optoelectronic Devices, Gas Sensors and Biosensors, ReRAM and Neuromorphic Computing, EMI Shielding and Functional Nanocomposites	
		Dr.Jay Chandra Dhar Assistant Professor	Semiconductor Devices and Nanoelectronics; Wide-Bandgap and Metal-Oxide Semiconductors; Nanostructured Thin Films and Nanowires; Semiconductor Heterojunctions and Interface Engineering; Optoelectronic Devices and Photodetectors; Solar Cells and Photovoltaic Devices; Gas Sensors and Intelligent Sensing Systems; Emerging Semiconductor Memory Devices; Intelligent Embedded Systems, and Automated Process Monitoring and Control	
		Dr.Roji Chanu Assistant Professor	Digital Image Processing, Communication, Post Quantum Cryptography	
		Dr.Madhusudan Singh Assistant Professor	Speech Processing, Biomedical Signal Processing and Edge Devices	
5	Electronics and Instrumentation Engineering	Prof.R.Kumar Professor	Wireless Communication, Control of Smart Structures, WSN, Embedded Systems, MEMS, IoT, Internet of Vehicles (IoV), Mobile Ad Hoc Network, Thin Film Flexible Bio-Transducer/Sensor, photo sensors, gas sensors, solar cells, Thin Film Solar Cells, Piezoelectric Sensors, Thin Film Flexible Devices, Solid State Batteries. Artificial intelligence, Machine learning, Deep learning, Network anomalies detection using AI algorithms, Resource management using Fog/IoT systems. Enhanced separation and sensing based biosensor utilizing Organic Thin Film Transistors (OTFT's) for capturing of Microorganisms, IoT Enable Smart Mental Healthcare Monitoring and Rehabilitation System. ScAlN piezoelectric MEMS energy harvester with nanostructure enhancement. Thin-film electrode BioMEMS/microfluidic sensor for label-free cell detection. Metal-oxide nanofilm MEMS micro-hotplate gas sensor.	B.E./B. Tech., M.E./M.Tech. in Electronics and Instrumentation Engg., Electronics and Communication Engg., Electrical and Electronics Engg., or relevant/ equivalent discipline. Material Science and Engineering, Industrial Instrumentation, Process Control, Fiber Optics and Laser Instrumentation, Control systems, Power Electronics, Electrical Engg., Electronics Engg., Electrical drives, Embedded Systems, Applied Electronics, Comm. Systems, Comm. Engg.,
		Dr. Biswajit Barman Assistant Professor	Nanomaterials & Thin Film Based Devices - Photosensors, Solar Cells, Gas	

			Sensors, Transistors, OLEDs, Piezoelectric Sensors, Simulation Techniques (SCAPS - 1D & DFT), Machine Learning for materials & sensors, AI assisted material	Communication Networks, VLSI, Signal Processing, MEMS, Microfluidics, or relevant/ equivalent discipline.
		Dr. Daijiry Narzary Assistant Professor	Fault Diagnosis and Fault-Tolerant Control, Intelligent Control Systems, Sliding-Mode Techniques, Electric Vehicle Drives, Power Electronics, Renewable Energy Systems, and Industrial Automation.	
6	Mechanical Engineering	Dr. Rosang Pongen Assistant Professor	Biomass, Biodiesel, Renewable Energy. Advanced Manufacturing, Advanced Machining Processes, CAD/CAM/CIM, Mechatronics and Automation, Material Science: Composites and Alloys, Soft Computing and Optimization, Tribology, MEMS devices and Fabrication, Robotics, Drone, Bio-medical Applications, Additive Manufacturing, 3D Printing, Alternative materials, Advanced farm Machinery, Industry 5.0 Applications, AI & ML in Mechanical Engineering, Computer Integrated Manufacturing and Automation, AIoT Systems, Sustainable Manufacturing.	B.E. /B. Tech., M.E./M.Tech. in Mechanical Engineering, Thermal Power Engineering, Fluid Engineering, Industrial Engineering, Metallurgical Engineering, Material Science, Production/ Manufacturing Engineering, Machine Design Engineering, Biomedical Engineering and equivalent / relevant /Allied discipline.
		Dr. Thingujam Jackson Singh	Biomass, Biodiesel, Renewable Energy. Advanced Manufacturing, Advanced Machining Processes, CAD/CAM/CIM, Mechatronics and Automation, Material Science: Composites and Alloys, Soft Computing and Optimization, Tribology, MEMS devices and Fabrication, Robotics, Drone, Bio-medical Applications, Additive Manufacturing, 3D Printing, Alternative materials, Advanced farm Machinery, Industry 5.0 Applications, AI & ML in Mechanical Engineering, Computer Integrated Manufacturing and Automation, AIoT Systems, Sustainable Manufacturing.	
		Dr. Amit Kumar Singh	Single & Multiphase flow, Non-Newtonian fluid Mechanics, Heat and Mass Transfer, Aerodynamics, Computational Fluid Dynamics, Biomass, Biodiesel, Renewable Energy, Electric Vehicle, Battery Advanced Manufacturing, Advanced Machining Processes, CAD/CAM/CIM, Mechatronics and Automation, Material Science: Composites and Alloys, Soft Computing and Optimization, Tribology, MEMS devices and Fabrication, Robotics, Drone, Bio-medical Applications, Additive Manufacturing, 3D Printing, Alternative materials, Advanced farm	

			Machinery, Industry 5.0 Applications, AI & ML in Mechanical Engineering, Computer Integrated Manufacturing and Automation, AIoT Systems, Sustainable Manufacturing.	
		Dr. Shambhu Kumar Mahato	Fluid and Thermal Engineering (Waste to Energy , Energy Conversion and Storage Technology, Sustainable Energy, Multiphase flow, Non-Newtonian fluid Mechanics, Heat and Mass Transfer, Aerodynamics, Computational Fluid Dynamics, IC Engine Combustion, Power Plant Engineering, Biomass, Biodiesel, Renewable Energy. Advanced Manufacturing, Advanced Machining Processes, CAD/CAM/CIM, Mechatronics and Automation, Material Science: Composites and Alloys, Soft Computing and Optimization, Tribology, MEMS devices and Fabrication, Robotics, Drone, Bio-medical Applications, Additive Manufacturing, 3D Printing, Alternative materials, Advanced farm Machinery, Industry 5.0 Applications, AI & ML in Mechanical Engineering, Computer Integrated Manufacturing and Automation.	
7	Science & Humanities (Mathematics)	Dr. Prem Prakash Mishra	Operation Research, Supply Chain Management, Market Structure in Economics, Mathematical Modelling	MSc in Mathematics/ MSc in Statistics/Operations Research.
		Dr. Manoj Kumar Patel	Rings Theory, Modules theory, Cryptography, Coding Theory and Codes over Rings	
8	Science & Humanities (Physics)	Dr. Jyoti Prasad Borah	Synthesis and Characterization of Nanomaterials, Hybrid Nanomaterials, Theoretical & Applied Nanomagnetism, Computational Condensed Matter, Neuromorphic Computing, Spintronics, Functional & High-Frequency Magnetism	MSc Physics/Master's in Physical Sciences/Engineering or allied field.
		Dr. Debarun Dhar Purkayastha	Metal oxide, doped metal oxide, polymer-metal oxide based thin films for self cleaning applications	
9	Science & Humanities (Chemistry)	Dr.Amrit Puzari	Applied Organic Catalysis, Enantioselective synthesis, Self-Assembly and Supramolecular chemistry, Green organic synthesis, Functional materials & Hybrid composite materials.	MSc in Chemistry. MSc/Masters in Chemical/Biological Sciences/Engineering or allied field.
		Dr. Jhimli Bhattacharyya	Chemical Dynamics, Environmental Chemistry, Bioinorganic and Biophysical Chemistry, Natural Product Chemistry	
10	Science & Humanities (Social Science)	Dr. A. Wati Walling	Religion and Culture, Political Ecology, Tribal Studies, Corruption and Conflict Studies	Master's degree in Sociology / Anthropology, allied Social Science field

INTERDISCIPLINARY RESEARCH TOPICS

[The selected candidates will be registered under the Department in which they have the met the Eligibility Criteria]

S. No	Area of Research	Joint Supervision	Department of the Faculty	Eligibility Criteria for the Candidate to Apply
1.	Sustainable Urban Infrastructure and Environmental Planning with GIS/LCA/AI-ML based modelling, Intelligent Monitoring & Assessment Technologies for Sustainable Smart Cities, UAV based Geospatial Intelligence, Environmental Impact Assessment, Drone based Surveillance, E-Waste Management, Supply Chain Logistics, Smart Energy management , Disaster Management, Digital Twins, Life Cycle Assessment (LCA), Renewable Power Generation Siting.	Dr. Nzanthung Ngullie Dr. D. Ganga	Civil Engineering Electrical and Electronics Engineering	Essential Qualification: M. Tech./M.E. in: Civil Engineering OR Electrical & Electronics, Communication/ Instrumentation & Control/AI & ML/ Data Science/ Embedded Systems/Industrial Engineering & Allied Branches
2.	Cyber Physical Systems	Dr. Nagaraju Baydeti Dr. Dipu Sarkar	CSE EEE	B. Tech./B.E., M. Tech./ M.E in Engineering/ Technology or Equivalent in Computer Science / Information Technology and Allied Branches. B.E./B. Tech., M.E./M.Tech. in Electrical and Electronics Engineering / Power Systems Engineering
3.	AI-Driven Intelligent Framework for Sustainable Design, Structural Health Monitoring, Performance Optimization, and Durability Assessment of Concrete and Composite Structures.	Dr. J. Arul Valan Dr. Pankaj Kumar	CSE Civil Engineering	B. Tech./B.E., M. Tech./ M.E in Engineering/ Technology or Equivalent in Computer Science / Information Technology and Allied Branches. And B. Tech. in Civil Engineering, M. Tech. in relevant discipline

S. No	Area of Research	Joint Supervision	Department of the Faculty	Eligibility Criteria for the Candidate to Apply
4.	AI-Driven Intelligent Framework for Smart Electrical and Industrial Systems	Dr. J. Arul Valan Dr. M. Prakash	CSE EEE	B. Tech./B.E., M. Tech./ M.E in Engineering/ Technology or Equivalent in Computer Science / Information Technology and Allied Branches. And B.E./B. Tech., M.E./M.Tech. in Electrical and Electronics, Electronics and Communication, Electronics and Instrumentation Engineering equivalent/relevant discipline.
5.	Affective Computing using Brain-Computer Interfaces and Machine Learning for Emotion Recognition from Neural Signals, Medical Image Processing	Dr.Nagaraju Baydeti Dr.M.Prakash	Computer Science and Engineering Electrical and Electronics Engineering	B.Tech. (ECE / EEE / EIE / CSE / IT / AI&ML, any other allied branch) M.Tech. (ECE / EEE / EIE / CSE / IT / AI&ML, any other allied branch)
6.	Hybrid Natural Fiber Conductive Composites for Sustainable Structural and Electronic Applications Drone Technology Smart Mechanical Systems	Dr. Amit Kumar Singh Dr. M. Prakash	Mechanical Engineering Electrical and Electronics Engineering	B.E./B. Tech., M.E./M.Tech. in Mechanical, Electrical and Electronics, Electronics and Communication, Electronics and Instrumentation Engineering equivalent/relevant discipline.
7.	Thin Films, Self-Cleaning Technology for Solar Panels, Nano Structures, High Power Devices	Dr.M.Prakash Dr. P Chinnamuthu	Electrical and Electronics Engineering Electronics and Communication Engineering	B.E./B.Tech.,/M.E./M.Tech. in Electrical and Electronics, Electronics and Communication, Electronics and Instrumentation Engineering, Material Science, Physics equivalent / any relevant discipline
8.	Nano structured based: Point-of-Care Diagnostic Devices and Non-Invasive Biomedical Sensing, Supercapacitors, Advanced energy storage device, wearable health care devices	Dr.M.Prakash Dr. Khelchand Singh	Electrical and Electronics Engineering Electronics and Communication Engineering	B.E./B.Tech.,/M.E./M.Tech. in Electrical and Electronics, Electronics and Communication, Electronics and Instrumentation Engineering, Material Science, Physics equivalent / any relevant discipline
9.	Multiphysics Design of Microfluidic Lab-on-Chip for Rapid Detection of Foodborne Pathogens Radio Frequency MEMS Cantilever beam-based bio sensors Resource management using Fog/IoT systems	Dr.M.Prakash Prof.R.Kumar	Electrical and Electronics Engineering Electronics and Instrumentation Engineering	B.E./B. Tech., M.E./M.Tech. in Electrical and Electronics, Electronics and Communication, Electronics and Instrumentation Engineering equivalent / any relevant discipline

S. No	Area of Research	Joint Supervision	Department of the Faculty	Eligibility Criteria for the Candidate to Apply
10.	Renewable Energy Drone Technology	Dr.M.Prakash Dr. Thingujam Jackson Singh	Electrical and Electronics Engineering Mechanical Engineering	B.E./B. Tech., M.E./M.Tech. in Mechanical Engineering, Electrical and Electronics, Electronics and Communication, Electronics and Instrumentation Engineering equivalent / any relevant discipline.
11.	Edge AI-Based Predictive Maintenance for Smart Grid Systems AI-based real time fault detection and Prediction in self-healing grids Edge- AI driven Framework for Real-Time Fault Diagnosis and Predictive Analytics of Electrical Equipments / Industrial Systems AI-Based Smart robotics and industrial automation Quantum algorithms for electrical optimization. Compute-in-Memory Architectures for Energy-Efficient AI Systems	Dr.J.Arul Valan Dr.M.Prakash	Computer Science and Engineering Electrical and Electronics Engineering	B. Tech./B.E., M. Tech./ M.E in Engineering/ Technology or Equivalent in Computer Science / Information Technology and Allied Branches. And B.E./B. Tech., M.E./M.Tech. in Electrical and Electronics, Electronics and Communication, Electronics and Instrumentation Engineering equivalent/relevant discipline.
12.	Electric Vehicles and Vehicle-to-Grid (V2G) Economics using deep learning strategy AI-Driven Demand Response for Electric Vehicle Fleet Management Privacy-Preserving Federated Learning for Electric Vehicle Charging Behavior	Dr. B. Shakila Dr.Arambam Neelima	Electrical and Electronics Engineering Computer Science and Engineering	B.Tech. (ECE / EEE / EIE / CSE / IT / AI&ML, any other allied branch) M.Tech. (ECE / EEE / EIE / CSE / IT / AI&ML, any other allied branch)
13.	Artificial Intelligence in Supply Chain Management, Industrial Management, Robotics Automation, UAV structural Optimization Mechanical design, Modeling, Inverse Kinematics, Dynamics and control design, Application of Artificial Intelligence and Machine Learning for mechanical systems	Dr. Thingujam Jackson Singh Dr. Dushmanta Kumar Das and	EEE ME	BTech (ME/EEE/EIE/ECE)
14.	Optimization, Machine Learning, Block chain	Dr. Shouvik Dey Dr. Dushmanta Kumar Das	CSE EEE	BTech (CSE/EEE/EIE/ECE)

S. No	Area of Research	Joint Supervision	Department of the Faculty	Eligibility Criteria for the Candidate to Apply
15.	Structural Design and Optimization, AI and Machine Learning for Civil Engineering	Dr. Pankaj Kumar Dr. Dushmanta Kumar Das	Civil Engineering EEE	BTech (Civil Engineering)
16.	Development of a Modular Software Platform for Multi-Functional Electrical Power System Analysis Using Advanced Numerical and Computational Algorithms	Dr. Dipu Sarkar Dr. Nagaraju Baydeti	EEE CSE	B. Tech./B.E., M. Tech./ M.E in Engineering/ Technology or Equivalent in Computer Science / Information Technology and Allied Branches. B.E./B. Tech., M.E./M.Tech. in Electrical and Electronics Engineering / Power Systems Engineering
17.	Post Quantum Cryptography, Semantic Communication /AI in Communication, VLSI Image Processing, Speech Emotion Recognition, XAI for Medical Signal Analysis	Dr. P.Roji Chanu Dr. Neelima Arambam	Electronics and Communication Engineering Computer Science and Engineering	B.E/B.Tech., M.E/M.Tech in Electronics and Communication Engineering, Computer Science / Information Technology/ Electrical Engineering/ Instrumentation Engineering, and Allied Branches.
18.	UAV-Based Fault Diagnosis System Health Monitoring of Structure	Dr. Daijiry Narzary Dr. V. Guru Prathap Reddy	Electronics and Instrumentation Engineering Civil Engineering	B.E./B. Tech., M.E./M.Tech. in Electrical and Electronics Engineering, Electronics and Instrumentation Engineering, Electronics and Communication Engineering, Civil Engineering equivalent/relevant discipline.
19.	Smart Sensing & Monitoring for Early Warning of Geohazards	Dr. Dhanesh Sing Das Dr. Biswajit Barman	Civil Engineering, Electronics & Instrumentation Engineering	B. Tech. in Civil Engineering, M. Tech. in relevant discipline OR B.E./B. Tech., M.E./M.Tech. in Electronics and Instrumentation Engg., Electronics and Communication Engg., Electrical and Electronics Engg., Material Science or relevant/ equivalent discipline

S. No	Area of Research	Joint Supervision	Department of the Faculty	Eligibility Criteria for the Candidate to Apply
20.	Advanced Materials and Sensor Technologies for Smart Prosthetic Systems	Dr. Biswajit Barman, Dr. Amit Kumar Singh	Electronics & Instrumentation Engineering Mechanical Engineering	B.E./B. Tech., M.E./M.Tech. in Electronics and Instrumentation Engg., Electronics and Communication Engg., Electrical and Electronics Engg., Material Science or relevant/ equivalent discipline OR B.E. /B. Tech., M.E./M.Tech. in Mechanical Engineering, Thermal Power Engineering, Fluid Engineering, Industrial Engineering, Metallurgical Engineering, Material Science, Production/ Manufacturing Engineering, Machine Design Engineering, Biomedical Engineering and equivalent / relevant / Allied discipline.
21.	Design, Multiphysics Simulation, vibration or seismic and Optimization of Piezoelectric Sensors for Structural Health Monitoring Applications Machine Learning-Based Prediction and Optimization of Thermal Behaviour, Microstructure, and Mechanical Properties in Directed Energy Deposition	Prof. R. KUMAR and Dr. AMIT KUMAR SINGH	Electronics & Instrumentation Engineering, Mechanical Engineering	B.E./B. Tech., M.E./M.Tech. in Electronics and Instrumentation Engg., Electronics and Communication Engg., Electrical and Electronics Engg., Material Science or relevant/ equivalent discipline OR B.E. /B. Tech., M.E./M.Tech. in Mechanical Engineering, Thermal Power Engineering, Fluid Engineering, Industrial Engineering, Metallurgical Engineering, Material Science, Production/ Manufacturing Engineering, Machine Design Engineering, Biomedical Engineering and equivalent / relevant / Allied discipline.
22.	Control and Optimization of Autonomous Vehicle	Dr. Daijiry Narzary & Dr. Dushmanta Kumar Das	Electronics and Instrumentation Engineering Electrical and Electronics Engineering	B.E./B. Tech., M.E./M.Tech. in Electronics and Instrumentation Engg., Electronics and Communication Engg., Electrical and Electronics Engg, M.E/M.Tech in Power and Control Engineering

S. No	Area of Research	Joint Supervision	Department of the Faculty	Eligibility Criteria for the Candidate to Apply
23.	Mechatronics and Automation, Material Science: Composites and Alloys, Soft Computing and Optimization, Alternative materials, Sustainable Materials, AIoT systems Sustainable Infrastructure & Environmental Panning, Municipal Solid Waste Management & Resource Recovery, Waste Recycling, AI/ML based modelling	Dr. Rosang Pongen & Dr. Nzanthung Ngullie	Mechanical Engineering & Civil Engineering	B.E/B.Tech/ M. Tech in Mechanical Engineering/Civil Engineering
24.	Mechatronics and Automation, Material Science: Composites and Alloys, Soft Computing and Optimization, Alternative materials, Sustainable Materials, AIoT systems IoT - Edge AI, Drone Sensing and Communication - Disaster Application, Smart Agriculture	Dr. Rosang Pongen & Dr. Lithungo Murry	Mechanical Engineering & Computer Science and Engineering	B.E./B. Tech., M.E./M.Tech. in Mechanical, Computer Science Engineering equivalent/relevant discipline.
25.	Smart Tribology: AI-Based Prediction of Wear, Friction, and Lubrication Performance AI-Based Structural Health Monitoring of Mechanical Components and Machines Digital Twin Framework for Smart Mechanical Systems AI Framework for Vision Based Defect Detection in Mechanical Systems	Dr. Amit Kumar Singh & Dr. Arambam Neelima	Mechanical Engineering & Computer Science and Engineering	B.E./B. Tech., M.E./M.Tech. in Mechanical, Computer Science Engineering equivalent/relevant discipline.

S. No	Area of Research	Joint Supervision	Department of the Faculty	Eligibility Criteria for the Candidate to Apply
26.	Multi-Objective Optimization of Thermal Management Systems for Electronic Devices Real-Time Maintenance Optimization of Industrial Systems Using the Industrial Internet of Things (IIoT) Numerical Investigation of Honeycomb Liquid-Cooling Channels for Electric Vehicle Battery Thermal Management Using COMSOL Multiphysics	Dr. Amit Kumar Singh & Prof. R. Kumar	Mechanical Engineering & Electronics and Instrumentation Engineering	B.E./B. Tech., M.E./M.Tech. in Mechanical, Production, Industrial, Electrical and Electronics, Electronics and Communication, Electronics and Instrumentation Engineering equivalent / any relevant discipline
27.	Performance Optimization and Fault-tolerant Control Technology of Drive System Numerical Investigation of Honeycomb Liquid-Cooling Channels for Electric Vehicle Battery Thermal Management Using COMSOL Multiphysics	Dr. Amit Kumar Singh & Dr. Daijiry Narzary	Mechanical Engineering & Electronics and Instrumentation Engineering	B.E./B. Tech., M.E./M.Tech. in Mechanical, Production, Industrial, Electrical and Electronics, Electronics and Communication, Electronics and Instrumentation Engineering equivalent / any relevant discipline
28.	Physics-informed AI and multiphysics modelling of EV battery thermal runaway	Dr. Shambhu Kumar Mahato & Dr. Daijiry Narzary	Mechanical Engineering & Electronics and Instrumentation Engineering	B.E./B. Tech., M.E./M.Tech. in Mechanical, Production, Industrial, Electrical and Electronics, Electronics and Communication, Electronics and Instrumentation Engineering equivalent / any relevant discipline

ELIGIBILITY CRITERIA FOR PHD PROGRAMME IN ENGINEERING

1. Master's degree in Engineering / Technology with Bachelor's degree in Engineering / Technology with a minimum First class and CGPA/CPI of 6.5 or above (on scale of 10) or 60 % marks (55% marks for SC/ST candidates).
2. MS by Research in Engineering / 5-year integrated Masters/ Dual Degree in Engineering or BS+MS (5-year integrated course) from CFTI in a relevant area specified above with a minimum First class and CGPA/CPI of 6.5 or above (on scale of 10) or 60 % marks (55% marks for SC/ST candidates).
3. Master's degree in Engineering / Technology with Master degree in Computer Application with a minimum First class and CGPA/CPI of 6.5 or above (on scale of 10) or 60 % marks (55% marks for SC/ST candidates).
4. MBBS with a Master degree with a minimum First class and CGPA/CPI of 6.5 or above (on scale of 10) or 60 % marks (55% marks for SC/ST candidates).

ELIGIBILITY CRITERIA FOR PHD PROGRAMME IN SCIENCE & HUMANITIES

Master's degree in Science (Physics / Chemistry / Mathematics / Statistics/ Operation Research/ Mathematics and Scientific Computation) / Humanities / M.E. /M.Tech or MS by Research in Engineering/ BS+MS (5-year integrated course) from CFTI or equivalent degree, with minimum First class and CGPA/CPI of 6.5 or above (on scale of 10) or 60 % marks (55% marks for SC/ST candidates)

ELIGIBILITY CRITERIA FOR INTEGRATED PH.D. PROGRAMME

Bachelor's degree in Engineering / Technology or equivalent in the disciplines of Civil Engineering, Electrical and Electronics Engineering, Electronics and Instrumentation Engineering, Electronics and Communication Engineering, Mechanical Engineering and Computer Science and Engineering with a minimum CGPA of 8.0 or above (on scale of 10) or 75 percent of marks and a valid GATE score. If the qualifying B.E. / B.Tech. degree is from an IIT / NIT or any Centrally Funded Technical Institute (CFTI) with CGPA 7.0 or 65 percent of marks, then the valid GATE score requirement shall be exempted. For getting the Institute HTTRA valid GATE score is mandatory for Integrated Ph.D. Programme. Those who does not have valid GATE score may be admitted but with self-finance mode only without HTTRA.

GUIDELINES FOR ADMISSION TO INTERDISCIPLINARY RESEARCH

1. The candidate shall submit his/her research plan in about 250 to 300 words along with his/her application.
2. Irrespective of application for IR or in one field, the candidate shall be examined in his/her discipline only to assess his / her suitability.
    a. If Bachelor and Master degree are from the same discipline, the candidate must take the selection exam in the same department only. After qualifying in the exam in his/her own discipline through the institute written Test / GATE, he / she will be considered for IR, if the candidate wishes to pursue in IR. The committee (IR) will consider only the Co-guide for the candidate.
    b. If the candidate has Bachelor and Master degree from different disciplines, then the institute Committee (IR) will examine the research proposal / plan of the candidate including his/ her written test/interview performance. This committee may recommend probable Supervisors and Co-Supervisor to guide the scholar.
3. The Scholar shall apply clearly stating the IR Area of Research, Joint Supervisors from the list provided. They can give maximum of three preferences of their choice from the above list, which consists of various areas of research in IR with the details of the supervisors for joint supervision.
4. The Scholar can interact with the probable guides recommended by the Committee and select his / her Guides for his / her work with the approval of Associate Dean / Dean (R&C).

OTHER GUIDELINES

- Candidates may visit the Institute Website for the Department Faculty area of research and the candidates can give three preferences of their choice of Supervisors. This is optional and the final Supervisor allocation would happen as per the Regulations of the Institute.
- Candidates applying for Ph.D. Program/ Integrated Ph.D. Program can apply through the downloaded application form only.
- Integrated Ph.D. Program is only applicable for all the engineering departments only in full-time mode.
- For Interdisciplinary Research (IR) applications, the candidate can choose the research proposal/ plan from the list of department specializations/ areas of research, but shall not be restricted to only those areas.
- If anyone requires to **apply for more than one specialization**, he/she should apply separately for each specialization with a **separate application fee**.
- Candidates can attach their academic profile, if required. The academic profile includes the following information:
    1. Details of publications/conference papers
    2. Awards, patents, prizes etc.,
    3. Other activities
- If the candidate is applying for full-time Ph.D. and he/she is employed, relieving certificate from the employer should be produced at the time of admission.
- The Institute will not be responsible for any error in application process.
- **The date and time of written test / interview for the shortlisted candidates will be uploaded in the institute website. So, the candidates are requested to check the website regularly for any updates.**
- **No separate intimation will be given to the individual applicant.**

The duly filled in application form hardcopy along with enclosures and a non-refundable application fee of Rs. 1000/- (SC / ST / PH candidates are exempted from application fee) by means of online transaction (**Account Name: IRG NIT Nagaland, Account Number: 35747839287, IFSC Code: SBIN0007543, Branch: SBI, Chumukedima**) should be sent to the office of the **Associate Dean (R&C), National Institute of Technology Nagaland, Chumukedima – 797 103, Nagaland, by Registered Post only on or before 25-11-2026.**

The Rules and Regulations of the Ph.D. program and Integrated Ph.D. program may be downloaded from the given link below: https://www.nitnagaland.ac.in/index.php/research/forms

NOTE:

1. **Candidates awaiting their final year results** are also eligible to apply for all the programs, subject to the submission of passing certificates, meeting all the above eligibility criteria of the institute at the time of physical document verification, reporting, and admission at the institute.

REGISTRAR