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

Ref.No. NIT-N/ADVT/Research/0001/2026 dated 16/04/2026

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). The Departments and Research Areas in which the following Programs will be offered are listed below:

Sl. No.	Department	Specialization/ Area of Research/ IR domain	Eligible Disciplines
1.	Civil Engineering	Solid Waste Management, Recycling Solid Waste into Alternative Building/ Road Materials, Geographic Information Systems (GIS) and Life Cycle Assessment (LCA) in Impact Studies, Water and Wastewater Engineering. Rainfall-induced Slope Instability; Urban Flood Mitigation; Hydro-mechanical Behaviour of Unsaturated soils; Climate-Resilient and Nature-Based Geotechnical Solutions; Ground Deformation Monitoring and Early Warning Systems. Rockfall Hazard Assessment and Protection Systems (Barriers, Drapery Systems, Structurally Dissipating Rock (SDR) Sheds). Application of Clays and Clay-Based Materials in Waste Containment and Water Retention Systems; Capillary Barrier Systems and Soil-based Liners. Sustainable utilisation of Solid and Industrial Waste in Geotechnical Engineering Applications. Soil–Water Interaction, Infiltration Processes, and Soil-Water Retention Behaviour. Characterization of Concrete, Concrete Microstructure, Durability of Concrete, Composite Materials, Steel – Concrete Composite Structures, Finite Element Modelling, Repair and Retrofitting of Structures, Structural Health Monitoring.	B. Tech. in Civil Engineering, M. Tech. in relevant discipline
2.	Computer Science and Engineering	Data Analytics, Artificial Intelligence, Machine Learning, Deep Learning, Bioinformatics, Computer Networks, Wireless Communication and Networks, IoT, Mobile Communications, Device to Device Communication, Vehicular Ad-Hoc Network, Public Safety Network, Semantic Communication, Image Processing, Video Processing, Information and Cyber Security, Blockchain Technology, Biomedical Image Processing, Biomedical Image Analysis, Data Mining, Stock Market Prediction using Machine Learning and Deep Learning, Multimedia Hashing, Sentiment Analysis, Recommender Systems, Intelligent Networks for Smart Cities, Intelligent	B. Tech./B.E., M. Tech./ M.E in Engineering/ Technology or Equivalent in Computer Science / Information Technology and Allied Branches.

		Transportation system, Natural Language Processing, Deep fake Detection, Compute Vision, Information Processing, Emotion Recognition, Cognitive and Data Science,	
3.	Electrical and Electronics Engineering	Micro Electro Mechanical Systems (MEMS), MEMS / NEMS Energy Harvesters, AI/ML-based Bio-Medical Applications, Solar Cell, Thin Films, Self-Cleaning Technology for Solar Panels, Nano Structures, High Power Devices. Smart Grids, Electric Vehicles: PEV/PHEV in Smart Distribution grid, Demand side Management and Demand response, Machine Learning and Deep Learning in smart grid applications, Renewable Energy Systems - Forecasting / Predictive analytics, Artificial Intelligence for Health Care Systems Machine Learning and Deep Learning for Machinery Maintenance and Fault Diagnostics, IoT in Smart Grids, AI-based Industrial Internet of Things, IoT / Fog Computing for Industrial Applications, Smart Transportation Systems and Intelligent Automotive Applications, Vehicular Networks. Wireless Ad-hoc and Sensor Networks. Robotics for Agriculture, Control System, Signal Processing, Optimization, Estimation, Control design for power system: Micro grids, PV system and Wind energy system, Control design for Power Converters and Filters, Converter Design, Multi-level Converter Design, Solar Cell Device, Biomedical instrumentation and Control, Control development for robotic vehicles. Power Systems Distribution Automation, Power Systems Protection, Wide Area Measurement Systems, Power System Analysis, Dynamics and Control, FACTS, Grid Integrated Renewable Energy Systems, Electricity Market, Congestion Management, Power System Cyber Security, Power Electronics, Restructured Power Systems, Power System Economics, Embedded Systems, Power System Operation & Control, Electric Drives	B.E./B. Tech., M.E./M.Tech. in Electrical and Electronics, Electronics and Communication, Electronics and Instrumentation Engineering equivalent/relevant discipline.
4.	Electronics and Communication Engineering	Semiconductor device modelling, Photovoltaic devices, Nanoelectronics, Gas sensors, Memory devices for neuromorphic applications, Optoelectronic Devices and Displays, Photodetectors, Bio Sensors, Power Devices, Quantum devices, Compound Semiconductors, Nitride semiconductors and High-Speed Devices, Flexible electronic devices, Nanotechnology, Low power devices and circuits, Organic electronics, Speech Processing, Antenna Design, Microstrip Antenna Design, Digital Image Processing, Medical Electronics, VLSI, Circuits and Systems, MEMs, Internet of Things (IoT), Artificial Intelligence and Machine learning, Wireless Communication, 5G/6G Communication, Cryptography, Image classification, computer vision, Bio medical signal processing.	B.E/B.Tech., M.E/M.Tech in Electronics and Communication Engineering, Electrical Engineering, Instrumentation Engineering, Nanotechnology and Allied Branches.
5.	Electronics and Instrumentation Engineering	Wireless Communication, Control of Smart Structures, WSN, Embedded Systems, MEMS, IoT, Internet of Vehicles (IoV), Mobile Ad Hoc Network. MEMS renewable energy systems. Energy efficient schemes for effective cluster-head selection and routing of WSN assisted IoT, Health data analysis using machine learning/ deep learning, Network anomalies detection using AI algorithms, Resource management using Fog/IoT systems.	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.

		Artificial intelligence, Machine learning, Deep learning, Robotics and automation, Biomedical image processing, Smart distributive sensor networks, Image and video processing, IoT based Industrial Automation, Microfluidics, Radio Frequency MEMS, Cantilever beam-based bio sensors. Behavioural OTFT micro/nano device for Biosensing DNA, Multianalyte assays suitable for body or health monitoring, Enhanced separation and sensing based biosensor utilizing Organic Thin Film Transistors (OTFT's) for capturing of Microorganisms. AI-Assisted Multiphysics Design of Microfluidic Lab-on-Chip for Rapid Detection of Foodborne Pathogens, Food Matrix Interference in Biosensors, Modeling of Nanomaterial-Enhanced Biosensors for High-Sensitivity Pathogen Detection, Enhanced Cancer Cell Separation, Biosensors for High-Viscosity Biological Samples. Thin Film Gas Sensor, Nanostructured Sensors, Thin Film Photosensors, compound semiconductors, solar cells, thin film piezoelectric sensors, Thin Film Devices, nanomaterials, solid state batteries. Fault diagnosis for Machines, Autonomous vehicles, Electric vehicle, DC Microgrids, Embedded Systems, Intelligent Systems, Renewable Energy, Bio Signal Processing Applications, Adaptive System design, Robust Control, Battery Management Systems and Energy Management, IoT and AI-based Smart Monitoring Systems, Renewable Energy Integrated EV Charging System, Machine Learning and Artificial Intelligence for Electric Vehicle System	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., Communication Networks, VLSI, Signal Processing, MEMS, Microfluidics, or relevant/ equivalent discipline.
6.	Mechanical Engineering	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.	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.
7.	Science & Humanities (Mathematics, Physics, Chemistry, Social Science)	**MATHEMATICS:** Optimization Theory, Cooperative Game Theory, Stochastic and Differential Game, Supply chain Network. Algebra, Theory of Rings and Modules, Algebraic Coding Theory and Cryptography. **PHYSICS:** Nanomaterials, Nanomagnetism, Thin Film Technology, Material science, Membrane Science & Technology. **CHEMISTRY**: Chemical Dynamics, Bioinorganic and Biophysical Chemistry, Natural product chemistry, Drug development, Development of low cost adsorbent materials	MSc in Mathematics/ MSc in Statistics/Operations Research. MSc Physics/Master's in Physical Sciences/Engineering or allied field. MSc in Chemistry. MSc/Masters in Chemical/Biological

		and applications, Environmental Chemistry. Applied Organic Catalysis, Enantioselective synthesis, Self-Assembly and Supramolecular chemistry, Green organic synthesis, Functional materials & Hybrid composite materials	Sciences/Engineering or allied field.
		SOCIAL SCIENCE (Sociology): Digital Sociology, Sociology of Morality, Sociology of Education, Northeast India Tribal 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	Smart Geotechnical Instrumentation and Monitoring of Geohazards for Early Warning Systems	Dr. Dhanesh Sing Das Dr. Biswajit Barman	Civil Engineering and Electronics & Instrumentation Engineering	**Essential Qualification:** M.Tech./M.E. in: Geotechnical Engineering / Civil Engineering OR Electronics & Communication / Instrumentation Engineering **Desired Background:** For Civil candidates: Soil mechanics, geotechnical engineering, Basic understanding of sensors or data acquisition For ECE/EIE candidates: Sensors, instrumentation, embedded systems, Signal acquisition and processing
2	Concrete/RC/Composite Durability Monitoring and Enhancement, Environmental Impact Assessment, Non-Destructive Assessment of Structures, Concrete Modelling, and Real-Time Structural Health Monitoring using AI, IoT, and Machine Learning	Dr Pankaj Kumar Dr.J.Arul Valan	Civil Engineering Computer Science and Engineering	**Essential Qualification:** M. Tech./M.E. in: Structural Engineering/ Construction Technology and Management/ Civil Engineering OR Computer Science and Engineering

S. No	Area of Research	Joint Supervision	Department of the Faculty	Eligibility Criteria for the Candidate to Apply
3	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.
4	AI Based Defect Detection and Prediction in Nanofabrication Processes Simulation of CNTFET-Based Logic Circuits Using AI Models Energy-Efficient Neuromorphic Architecture Using Memristive Nano Devices AI based Framework for Scalable IoT Digital Twins AI based Smart implants Quantum Machine Learning for Adaptive Wireless Communication	Dr.J.Arul Valan Dr.P.Chinnamuthu	Computer Science and Engineering Electronics and Communication 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 Electronics and Communication Engineering, Electrical Engineering, Instrumentation Engineering, Nanotechnology and Allied Branches.

S. No	Area of Research	Joint Supervision	Department of the Faculty	Eligibility Criteria for the Candidate to Apply
5	AI-Driven Predictive Modelling of Long-Term Durability in Reinforced Concrete Structures under Multi-Environmental Stressors AI and Edge Computing for Real-Time Monitoring and Optimization of Environmental Impact in Concrete Structures AI-Enhanced Interpretation of Non-Destructive Testing (NDT) Data for Predictive Durability and Damage Assessment of RC and Composite Structures AI and Machine Learning-Driven Optimization of Concrete Mix Design for Structural Performance and Durability Enhancement under Variable Environmental Conditions AI-Driven IoT Sensor Networks for Real-Time Structural Health Monitoring of Reinforced Concrete and Composite Structures	Dr.J.Arul Valan Dr.Pankaj Kumar	Computer Science and Engineering 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
6	AI-driven biomass energy optimization IoT-enabled waste-to-composite systems Machine learning in sustainable material design Smart sensors for energy and material monitoring Digital twins for biomass and composite production Circular economy via IoT-AI integration AI-driven waste management	Dr.J.Arul Valan Dr. Thingujam Jackson Singh	Computer Science and Engineering Mechanical 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 Mechanical Engineering, Metallurgical Engineering, Material Science, Production Engineering, Mechanical Design, Biomedical and Engineering Fluid Mechanics and equivalent / relevant /Allied discipline

S. No	Area of Research	Joint Supervision	Department of the Faculty	Eligibility Criteria for the Candidate to Apply
7	Cyber-Physical Energy Systems	Dr.Nagaraju Baydeti Dr. Dipu Sarkar	Computer Science and Engineering Electrical and Electronics Engineering	B.Tech. (CSE / IT / AI&ML, any other allied branch) M. Tech. (CSE / IT / AI&ML, any other allied branch) B.Sc. and M.Sc. (CSE / IT or any allied branch) Master of Computer Applications with BCA / B.Sc. in any science branch / any equivalent UG degree
8	Privacy-Preserving Distributed Edge Intelligence for Autonomous Smart Homes Dynamic Resource Allocation and Quantization Frameworks for Real-Time Computer Vision on Low-Power IoT Edge Devices	Dr.Nagaraju Baydeti Prof.R.Kumar	Computer Science and Engineering Electronics and Instrumentation 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)
9	Affective Computing using Brain-Computer Interfaces and Machine Learning for Emotion Recognition from Neural Signals	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) B.Sc. and M.Sc. (CSE / IT or any allied branch) Master of Computer Applications with BCA / B.Sc. in any science branch
10	Hybrid Natural Fiber Conductive Composites for Sustainable Structural and Electronic Applications Drone Technology	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.

S. No	Area of Research	Joint Supervision	Department of the Faculty	Eligibility Criteria for the Candidate to Apply
11	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.
12	UAV-Based Landslide Monitoring System Computer Vision-Based Condition Assessment Framework for Structural and Mechanical Systems Using Integrated Health Indicators	Dr. Amit Kumar Singh Dr. V. Guru Prathap Reddy	Mechanical Engineering Civil Engineering	B.E./B. Tech., M.E./M.Tech. in Mechanical, Civil Engineering equivalent/relevant discipline.
13	Solid waste management, High density Poly ethylene (HDPE) composites, Sustainable Engineering, Alternative Materials	Dr. Rosang Pongen Dr. Nzanthung Ngullie	Mechanical Engineering Civil Engineering	B.E/B.Tech/ M. Tech in Mechanical Engineering/Civil Engineering
14	Micro/nanoscasle fluid cooling for high-power electronics and battery packs (liquid-cooled cold plates, micro-channel and jet impingement systems)	Dr. Shambhu Kumar Mahato Dr. Daijiry Narzary	Mechanical Engineering Electronics and Instrumentation Engineering	B.E/B.Tech/M. Tech in Mechanical Engineering/ Electronics and Instrumentation Engineering
15	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

S. No	Area of Research	Joint Supervision	Department of the Faculty	Eligibility Criteria for the Candidate to Apply
16	Speech Processing Image Processing Multilingual Speaker Recognition Humans Pattern Recognition	Dr. Debadatta Pati Dr. Lithungo Murry	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
17	Biomedicine MOF-Based Hybrid Nanostructures	Dr. Naorem Khelchand Singh Dr.Amrit Puzari	Electronics and Communication Engineering Science and Humanities (Chemistry)	Master's degree (M.Tech/M.Sc) in: Materials Science / Nanotechnology, Biomedical Engineering, Electronics , Physics / Applied Physics / Chemistry/Zoology/Botany, Biochemistry, Biotechnology/Microbiology
18	Astromaterials Nano magnetism Nanoelectronics	Dr. Naorem Khelchand Singh Dr.Jyoti Prasad Borah	Electronics and Communication Engineering Science and Humanities (Physics)	Master's degree (M.Tech/M.Sc) in: Materials Science / Nanotechnology, Physics / Applied Physics / Astrophysics, Electronics / Electrical Engineering, Chemistry / Applied Chemistry, Aerospace Engineering / Zoology/Botany, Biochemistry, Biotechnology/Microbiology
19	Magneto Resistive Sensor	Dr. P Chinnamuthu Dr.Jyoti Prasad Borah	Electronics and Communication Engineering Science and Humanities (Physics)	Master's degree (M.Tech/M.Sc) in: Materials Science / Nanotechnology, Physics / Applied Physics , Electronics / Electrical Engineering.
20	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.,/B.Sc M.E./M.Tech./ M.Sc in Electrical and Electronics, Electronics and Communication, Electronics and Instrumentation Engineering, Material Science, Physics equivalent / any relevant discipline

S. No	Area of Research	Joint Supervision	Department of the Faculty	Eligibility Criteria for the Candidate to Apply
21	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
22	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.
23	Thin-Film Solar Cells via Solution-Processed Routes	Dr. Biswajit Barman Dr. Debarun Dhar Purkayastha	Electronics and Instrumentation Engineering Science and Humanities (Physics)	M.E./M.Tech. in Electronics & Communication Engineering / Electronics & Instrumentation Engineering / Material Science / Nanotechnology OR M.Sc. in Physics / Electronics
24	Application of Artificial Intelligence in Supply Chain Management, Industrial Management, Robotics and Automation (Mechanical design, Modeling, Inverse Kinematics, Dynamics and Control design) Application of Artificial Intelligence and Machine Learning for mechanical systems Design & In-service Inspection	Dr. Dushmanta Kumar Das Dr. Thingujam Jackson Singh	Electrical and Electronics Engineering Mechanical Engineering	Master degree in Mechanical Engineering, Production Engineering and Allied discipline, All Mechanical and Electrical, Allied discipline, Computer Science Engineering, Information Technology and its Allied Branch
25	Blockchain, AI, Machine Learning and Deep Learning	Dr. Dushmanta Kumar Das Dr.Shouvik Dey	Electrical and Electronics Engineering Mechanical Engineering	Master in Computer Application (MCA), MTech in Computer Science Engineering, Btech in CSE (Integrated PhD), any other allied branch

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26	Multimodal Signal Processing using AI	Dr.Arambam Neelima Dr.P.Roji Chanu	Computer Science and Engineering Electronics and Communication Engineering	B.E/B.Tech, ME/M.Tech in Electronics and Communication Engineering/Computer Science and Engineering or relevant/equivalent discipline
27	AI/ML-Driven Computer Vision for Automated Waste Detection and Smart Waste Management Systems	Dr.Arambam Neelima Dr.Nzanthung Ngullie	Computer Science and Engineering Civil Engineering	B.E/B.Tech, ME/M.Tech in Civil Engineering/Computer Science and Engineering or relevant/equivalent discipline
28	Algorithmic Game Theory and Mechanics Design	Dr.Prem Prakash Mishra Dr.Arambam Neelima	Science and Humanitites (Mathematics) Computer Science and Engineering	M.Tech. Computer Science/ M.Sc. in Mathematics & Computation
29	Advanced Nano materials for Electrical devices	Dr. M. Prakash Dr.Jyoti Prasad Borah	Electrical and Electronics Engineering Science and Humanities (Physics)	B.E./B.Tech.,/B.Sc M.E./M.Tech./ M.Sc in Electrical and Electronics, Electronics and Communication, Electronics and Instrumentation Engineering, Nanotechnology/ Material Science, Physics equivalent / any relevant discipline
30	Smart Grids and ElectroMagneticInterference (EMI) Nanomagnetism in Power Electronics Nanomagnetism in Electrical engineering	Dr. B. Shakila Dr.Jyoti Prasad Borah	Electrical and Electronics Engineering Science and Humanities (Physics)	B.E./B.Tech.,/B.Sc M.E./M.Tech./ M.Sc in Electrical and Electronics, Electronics and Communication, Electronics and Instrumentation Engineering, Nanotechnology/ Material Science, Physics equivalent / any relevant discipline
31	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) B.Sc. and M.Sc. (CSE / IT or any allied branch) Master of Computer Applications with BCA / B.Sc. in any science branch

S. No	Area of Research	Joint Supervision	Department of the Faculty	Eligibility Criteria for the Candidate to Apply
32	Bioinformatics and Bio-engineering	Dr.Jhimli Bhattacharyya Dr.Arambam Neelima	Science and Humanities (Chemistry) Computer Science and Engineering	Master's degree (M.Tech/M.Sc/M.Pharm) in: Chemical/Physical/Biological Sciences /Biotechnology/ or relevant/equivalent discipline B.E/B.Tech, ME/M.Tech in Biotechnology/Computer Science and Engineering or relevant/equivalent 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 08-05-2026.**

The Rules and Regulations of the Ph.D. program and Integrated Ph.D. program may be downloaded from the given link below:

http://nitnagaland.ac.in/index.php/academics/rules-and-regulations

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