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

Ref.No. NIT-N/ADVT/Research/0001/2021 dated 12/05/2021

A. Ph.D. PROGRAMME

Applications are invited from qualified candidates for admission to Ph.D programme (Full Time / Part Time) in the disciplines of CE, EEE, ECE, CSE, EIE, ME, Mathematics, Physics, Chemistry and Inter Disciplinary Research. The Departments and areas in which the following Programmes will be offered.

SL. NO.	DEPARTMENT	SPECIALIZATION/ AREA OF RESEARCH	Eligible Disciplines
1.	Civil Engineering	Structural Engineering, Environmental Engineering, Concrete Technology, Functionally graded concrete, concrete microstructure and durability, Steel –Concrete composite Structures, Finite Element Modelling, Waste Utilization in Concrete and Bricks Manufacturing, Solid Waste Management.	
2.	Computer Science and Engineering	Data Analytics, Machine Learning, Deep Learning, Bioinformatics, Online Social Networks, Computer Networks, Wireless Communication and Networks, IOTs, Mobile Communications, Image Processing, Information Security, Biomedical Image Processing, Data Mining, Stock Market Prediction using Machine Learning and Deep Learning	B.Tech/B.E in CSE/IT and M.Tech/M.E in CSE/IT
3.	Electrical and Electronics Engineering	Power Systems, Smart Electric Grids, Demand Side Management, Internet of Things, Electric Vehicles: PEV/PHEV in Smart Distribution grid, Power Systems Protection, Applications of Machine Learning and Deep Learning in Power Systems.	

		Renewable Energy Systems, Micro Grid and Smart Grids, Power Systems, Forecasting / Predictive analytics, Machine Learning and Deep Learning, Internet of Things. IoT based Industrial Automation, Condition Monitoring of Machines, Artificial intelligence & Data Analytics for Electrical Engineering, Artificial intelligence for Educational Systems, Applications of Signal Processing. Control System, Optimization, Biomedical instrumentation and Control, Biomedical image processing, Estimation, Control design for power system, Control design for Microgrid, PV system and Wind energy system, Control design for Power Converters and Filters, Machine Learning and Deep Learning in control perceptive, Control development for robotic vehicles. Power Systems, Power System operation control and Stability, Relay Coordination, Deregulated Power System, Application of IoT and Machine Learning for Smart Grid, Service Restoration and Distribution Network Reconfiguration, Grid Integrated Renewable Energy	
4.	Electronics and Communication Engineering	Semiconductor device modelling, Optoelectronic devices, Photovoltaic devices, Nanoelectronics, Gas sensors, Memory devices, Speech Processing, Antenna Design and Digital Image Processing, Medical Electronics.	
5.	Electronics and Instrumentation	Wireless Communication, Control of Smart Structures,	

	Engineering	WSN, Embedded Systems, MEMS and IOT.	
6.	Mechanical Engineering	Micromachining, advanced machining processes, Conventional Machining, CAD/CAM/CIM, Composites, manufacturing, material science, casting, Optimization.	
7.	Science (Physics, Chemistry and Mathematics) and Humanities	Nanomaterials, Nanomagnetism, Thin Film Technology, Material science, Membrane Science & Technology, Physical Chemistry, Environmental Chemistry, Bioinorganic and Biophysical Chemistry, Organic Chemistry and Applied catalysis. Nano-catalyst, Bio fuel, Materials Science. Optimization Theory, Cooperative Game Theory, Supply chain Network, Abstract Algebra, Ring and Module Theory.	M.Sc in Physics/Chemistry/ Mathematics/ Masters in physical/chemical/ biological sciences/engineering or allied field.M.Sc in Statistics/ Operation research

INTERDISCIPLINARY RESEARCH

SL. NO.	Research Areas	Eligible Disciplines
1.	Communication in Phasor Measurement Unit	Master degree in Electrical Engg./Electrical and Electronics Engg./ Electrical and Instrumentation
2.	Condition monitoring of Power apparatus	Master degree in Electrical Engg/Electrical and Electronics Engg./ Electrical and Instrumentation / Computer Science & Engineering
3.	Graph theory in Power System Configuration	Master degree in Electrical Engg./Electrical and Electronics Engg./ Electrical and Instrumentation
4.	Wireless Sensor Networks	Master degree in Computer Science and Engineering; Computer Engineering; Information Technology; Electronics and Communication Engineering; Electrical and Electronics Engineering; Electronics and Instrumentation Engineering; Communication Engineering; Artificial Intelligence; (or any other degree relevant to abovementioned disciplines)
5.	Application of Artificial Intelligence and Machine Learning for mechanical systems	Master degree in Mechanical Engineering and Allied discipline

	& In-service Inspection	
6.	Application of Artificial Intelligence in Supply Chain Management, Industrial Management	Master degree in Mechanical Engineering, Electrical Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering, Electronics and Instrumentation Engineering, All Mechanical and Electrical Allied discipline, Computer Science Engineering, Information Technology and its Allied Branch
7.	Robotics and Automation (Mechanical design, Modeling, Inverse Kinematics, Dynamics and control design)	Master degree in Mechanical Engineering, Electrical Engineering, Electrical and Electronics Engineering, Electronicsand Communication Engineering, Electronicsand Instrumentation Engineering, All Mechanical and Electrical Allied discipline
8.	Nano Devices modeling, simulation and optimization	Master degree in Electrical Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering, Electronics and Instrumentation Engineering, All Electrical and Electronics Allied disciplines
9.	Artificial Intelligence in VLSI, Network on Chip, etc	Master degree in Electrical Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering, Electronics and Instrumentation Engineering, Computer Science Engineering, Information Technology and its Allied Branch, All Electrical and Electronics Allied disciplines
10.	Theoretical and computational study on Magnetism, Nano Magnetisim,	MSc Physics, Master degree in Electrical Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering, Electronics and Instrumentation Engineering, All Electrical and Electronics Allied disciplines
11.	Machine Learning and its applications	Computer Science and Engineering; Computer Engineering; Information Technology; Electronics and Communication Engineering; Electrical and Electronics Engineering; Electronics and Instrumentation Engineering; Communication Engineering; Aerospace Engineering, Mechatronics Engineering Artificial Intelligence; (or any other degree relevant to abovementioned disciplines)
12.	IoT based Industrial Automation	Master degree in Engineering / Technology with Bachelor's degree in Engineering / Technology/ MS by Research in Engineering / 5 year integrated Masters/ Dual Degree in Engg. or BS+MS (5-year integrated course) from CFTI. (in areas of EEE/EIE/CSE/IT/ECE/Mechatronics)
13.	Predictive Analytics	Master's degree in Engineering / Technology with Bachelor's degree in Engineering /

	for Automation Technologies	Technology / MS by Research in Engineering / 5 year integrated Masters/ Dual Degree in Engg. or BS+MS (5-year integrated course) from CFTI (inareas of EEE/EIE/CSE/IT/Mechatronics)
14.	Data Analytics for Smart Vehicles	Master degree in Engineering / Technology with Bachelor's degree in Engineering / Technology / MS by Research in Engineering / 5 year integrated Masters/ Dual Degree in Engg. or BS+MS (5-year integrated course) from CFTI in areas of EEE/EIE/CSE/IT
15.	Biosensors and Bioelectronics	MSc/M.Tech in material Science / Bioelectronics / biotechnology or Master's degree in Biotechnology/ Nanotechnology/ Electronics and Communication /Electrical / Electrical and Electronics Engineering/ Electronics and Instrumentation Engineering
16.	Solar Photovoltaic cell	Master degree in Electronics and Communication Engineering; Electrical and Electronics Engineering; Electronics and Instrumentation Engineering; Computer Science and Engineering; Computer Engineering; Information Technology; Communication Engineering; (or any other degree relevant to abovementioned disciplines)
17.	Coding Theory	Master degree in Mathematics / Computer Science.
18.	Game Theory and its Applications in	Master degree in economics with Specialization in computer science. Artificial Intelligence Bachelor degree in computer Science & Master degree in economics.
19.	Wireless Sensor Networks	Computer Science and Engineering; Computer Engineering; Information Technology; Electronics and Communication Engineering; Electrical and Electronics Engineering; Electronics and Instrumentation Engineering; Communication Engineering; Artificial Intelligence; (or any other degree relevant to abovementioned disciplines)
20.	Internet of Things	B.Tech. / B.E. M.Tech. / M.E. / MCA Computer Science and Engineering; Computer Engineering; Information Technology; Electronics and Communication Engineering; Electrical Engineering; Electrical and Electronics Engineering; Electronics and Instrumentation Engineering; Communication Engineering (or any other degree relevant to above mentioned disciplines)
21.	Medical Image Processing using	B.Tech. / B.E. M.Tech. / M.E. / MCA Computer Science and Engineering; Computer

	Optimization Techniques	Engineering; Information Technology; Electronics and Communication Engineering; Electrical Engineering; Electrical and Electronics Engineering; Electronics and Instrumentation Engineering; Communication Engineering (or any other degree relevant to above mentioned disciplines)

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 Engg 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 AND HUMANITIES

Master's degree in Science/Humanities/ME/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)

B. INTEGRATED Ph.D. PROGRAMME

Applications are also invited from qualified candidates for admission to Integrated Ph.D. Programme in the disciplines of CE, EEE, EIE, ECE, ME and CSE for the above-mentioned specialization/area.

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 8.5 or 80 percent of marks, then the valid GATE score requirement shall be exempted but scholarship will be provided to only to candidates with valid GATE score.

Note: 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.

C. OTHER GUIDELINES

- Candidates applying for Ph.D. Programme/Integrated Ph.D. Programme can apply through the downloaded application form only.
- Integrated Ph.D. Programme is only applicable for all the engineering departments only in full-time mode.
- If anyone requires to apply for more than one specialization, he / she should apply separately for each specialization with the same application fee.
- Candidates can attach their academic profile, if required. 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.
- Preference will be given to those candidates who are having valid GATE / NET score.
- 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 along with enclosures and a non-refundable application fee of Rs. 500/- (SC / ST / PH candidates are exempted from application fee) by means of a Demand Draft drawn in favour of **Director, NIT Nagaland**, payable at Chumukedima, Dimapur should reach the office of the **Associate Dean (R&C), National Institute of Technology Nagaland, Chumukedima, Dimapur – 797 103 on or before 01-07-2021 by 4.00 p.m.**

The Rules and Regulations of Ph.D. Programme and Integrated Ph.D. Programme shall be downloaded from the Webaddress: http://nitnagaland.ac.in/index.php/academics/rules-and-regulations.

Note:

Only full-time candidates with GATE score/UGC NET including lectureship (Assistant Professorship) in order of merit will be considered for institute scholarship subject to the availability of funds from MHRD. Others are not eligible for scholarships.

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