



राष्ट्रीय प्रौद्योगिकी संस्थान आंध्र प्रदेश
NATIONAL INSTITUTE OF TECHNOLOGY ANDHRA PRADESH

Near National Highway No. 16, Kadakatla, Tadepalligudem – 534101

West Godavari District, Andhra Pradesh, India

Adv. No- NITANP/SASS/ADM/2024-25/1821

Date-12-11-2024

**ADMISSION TO THE PH.D. (FULL-TIME)/ PH.D. (PART-TIME) / PH.D. (UNDER PROJECT)/
INTERDISCIPLINARY PH.D. (FULL-TIME) PROGRAMMES – DECEMBER 2024 SESSION**

1. THE INSTITUTE:

National Institute of Technology Andhra Pradesh, Tadepalligudem, is an Institute of National Importance, established in the A.Y. 2015. It is a fully-funded Institute under the Ministry of Education, Government of India. Currently, the Institute offers B.Tech. programme in eight engineering branches, Bio-Technology, Chemical Engineering, Civil Engineering, Computer Science & Engineering, Electrical Engineering, Electronics & Communication Engineering, Mechanical Engineering, and Metallurgical & Materials Engineering. The Institute also offers Ph.D. (both under Full-time, Part-time, under Project modes) programme in the above-mentioned engineering branches, Sciences (Mathematics, Physics, Chemistry) and Humanities (English). The Institute has introduced interdisciplinary Ph.D. (Full-time) programme from the AY 2024-25.

2. ABOUT THE RESEARCH PROGRAMMES:

The Institute offers Ph.D. (both full-time and part-time) in all the existing departments mentioned above. The Institute also offers interdisciplinary Ph.D. (full-time) programme in specified research projects proposed jointly by the faculty members from two different departments to explore the research areas at the interface between various engineering and science disciplines.

Details of department-wise research areas for admission to the Ph.D. programmes are given in Annexure-A and list of projects for the interdisciplinary Ph.D. (Full-Time) programme is available in Annexure-B.

The following is the list of admission modes for Ph.D. programmes.

a) Ph.D. Full-Time – Stipendiary category:

Half-Time Research Assistantship (HTRA) is available to the full-time scholars who are admitted to Ph.D. programmes in different departments and in interdisciplinary Ph.D. programmes funded by the Ministry of Education (MoE), Government of India. The award and renewal of the assistantship/scholarship are as per the guidelines issued by MoE, from time to time. The recipients of HTRA are required to assist the department in academic works. The assistantship/scholarship will not be available for sponsored candidates or to the scholars getting financial support from any private agency or other agencies under state or central governments. Candidates having their fellowships from funding agencies such as DST, CSIR, UGC, NBHM, etc. can also apply for Ph.D. (Full-time) in any department relevant to the research grant.

b) Ph.D. - Project category:

This category of Ph.D. programme is open for the candidates who are currently working under any sponsored project as JRF/SRF/Project assistant with the faculty members of NIT Andhra Pradesh and interested to pursue Ph.D. degree. The candidates will be admitted to the Ph.D. programme to work on full-time basis under the project. If the project gets completed before the student completes his/her PhD programme, his/her category will be converted to the SELF-FINANCED mode (no financial assistance will be provided from the Institute) unless he/she is granted an assistantship/fellowship from the Institute or any other agency. The eligibility criteria and the selection procedure shall remain the same as the Ph.D. full-time stipendiary category.

c) Ph.D. (Part-Time):

These positions are open for the candidates who are working on a regular basis (or the position should be ratified by the university, if the position is not regular) in reputed research organizations/academic Institutions/Industries with a minimum experience of two years. The applicants are not entitled to receive institute stipend. These positions are also open for the permanent staffs of NIT Andhra Pradesh.

3. ELIGIBILITY CRITERIA:

a. Eligibility criteria for Ph.D. (Full-Time) programme in Engineering:

Candidates applying for Ph.D. (Full-Time) programme in Engineering branches should satisfy all the criteria listed below.

- Candidates with a Master's degree in Engineering/Technology/Science in the appropriate branch of study. Candidates belong to UR/EWS/OBC-NCL category must have secured 60% (or above) aggregate marks (CGPA of 6.5) either at UG or PG level examination. For SC/ST/PwD candidates, 55% aggregate (or above) marks or equivalent CGPA of 6.0 is essential either at UG or PG level.
- Candidates should have qualified GATE/NET in the relevant disciplines. However, GATE/NET qualification is not mandatory for the candidates with M.Tech. degree pursued from Centrally funded Institutions (CFI) with a minimum CGPA of 7.5. GATE/NET qualification is mandatory for the candidates with M.Sc. degree in relevant specialization seeking admission to the Ph.D. in engineering departments.

OR

- Candidates with Bachelor's in Engineering / Technology in the appropriate branch of study. Candidates belong to UR/EWS/OBC-NCL category must have secured 75% (or above) aggregate marks or equivalent CGPA of 8.0, and for the SC/ST/PwD candidates, 70% aggregate (or above) marks or equivalent CGPA of 7.5.
- Candidates should have qualified GATE/NET in the relevant disciplines. However, GATE/NET qualification is not mandatory for the candidates with B.Tech. degree pursued from Centrally funded Institutions (CFI) with a minimum CGPA of 7.5.

b. Eligibility criteria for Ph.D. (Full-Time) programme in Sciences and English:

Candidates applying for Ph.D. (Full-Time) programme in Sciences and English should satisfy all the criteria listed below.

- Candidates with a Master's degree in relevant branch of science for Ph.D. in science and a Master's degree in relevant branch of English for Ph.D. in English.
- Candidates belong to UR/EWS/OBC-NCL category must have secured 60% (or above) aggregate marks (CGPA of 6.5) either at UG or PG level examination. For SC/ST/PwD candidates, 55% aggregate (or above) marks or equivalent CGPA of 6.0 is essential either at UG or PG level.
- Candidates should have qualified GATE or UGC/CSIR-NET in relevant discipline. GATE/NET qualification is not mandatory for the candidates with Master's degree pursued from CFI with a minimum CGPA of 7.5.

c. Eligibility criteria for interdisciplinary Ph.D. (Full-Time) programme:

Candidates applying for interdisciplinary Ph.D. (Full-Time) programme should satisfy all the criteria as mentioned above for Ph.D. full-time programme in Engineering or Sciences.

Project-wise additional eligibility criteria are mentioned in Annexure-B for the candidates applying for interdisciplinary Ph.D. (Full-Time) programme.

d. Eligibility criteria for Ph.D. (Part-Time) programme in Engineering:

Candidates applying for Ph.D. (Part-Time) programme in engineering branches should satisfy all the criteria listed below.

- Candidates should be working on a regular basis (or the position should be ratified by the university, if the position is not regular) in reputed research organizations/academic Institutions/Industries with a minimum experience of two years.
- Candidates with a Master's degree in Engineering/Technology or a Master's degree by Research in Engineering/Technology in appropriate branches.
- Candidates belong to UR/EWS/OBC-NCL category must have secured 60% (or above) aggregate marks (CGPA of 6.5) either at UG or PG level examination. For SC/ST/PwD candidates, 55% aggregate (or above) marks or equivalent CGPA of 6.0 is essential either at UG or PG level.

e. Eligibility Criteria for Ph.D. (Part-Time) Programme in Sciences and English:

Candidates applying for Ph.D. (Part-Time) programme in Sciences or English should satisfy all the criteria listed below.

- Candidates with a Master’s degree in relevant branch of Sciences or English for Science or English respectively.
- Candidates belong to UR/EWS/OBC-NCL category must have secured 60% (or above) aggregate marks (CGPA of 6.5) either at UG or PG level examination. For SC/ST/PwD candidates, 55% aggregate (or above) marks or equivalent CGPA of 6.0 is essential either at UG or PG level.
- Candidates should have qualified GATE or UGC/CSIR-NET in the relevant discipline.
- Candidates should be working on a regular basis (or the position should be ratified by the university, if the position is not regular) in reputed research organizations/academic Institutions/Industries with a minimum experience of two years.

4. SELECTION PROCEDURE: Written Test and/or Interview

5. FEE STRUCTURE#:

Fee Particulars	Ph.D. (Full-Time)									
	I Year		II Year		III Year		IV Year		V Year	
	Odd Sem	Even Sem	Odd Sem	Even Sem	Odd Sem	Even Sem	Odd Sem	Even Sem	Odd Sem	Even Sem
Tuition Fee (All categories)	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500
Other Fee	28600	2900	2900	2900	2900	2900	2900	2900	2900	2900
Total (Rs.)	36100	10400	10400	10400	10400	10400	10400	10400	10400	10400
Fee Particulars	Ph.D. (Part-Time)									
	I Year		II Year		III Year		IV Year		V Year	
	Odd Sem	Even Sem	Odd Sem	Even Sem	Odd Sem	Even Sem	Odd Sem	Even Sem	Odd Sem	Even Sem
Tuition Fee (All Categories)	30000	30000	30000	30000	30000	30000	30000	30000	30000	30000
Other Fee	28600	2900	2900	2900	2900	2900	2900	2900	2900	2900
Total (Rs.)	58600	32900	32900	32900	32900	32900	32900	32900	32900	32900

The fee structure may change from time-to-time as per the institute’s policy. Hostel fee structure is available on the Institute website.

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GENERAL INSTRUCTIONS

- a) The candidates are required to fill and submit the application form through the link as mentioned below. <https://nitandhraadm.samarth.edu.in/>.
- b) The applicant should forward the soft copy of the application form, fee payment receipt and all the testimonials (merged into one file) through email to phdadmissions@nitandhra.ac.in, clearly mentioning course, branch and application number of the applicant in the subject of the email. The applicant should also keep the soft copy of the submitted application for future reference.
- c) The candidates must pay the required application fee of **Rs. 500/- (Rs. 250/- for SC/ST/PwD categories)** for each programme/department/school/discipline. Application fee once paid is non-refundable. After successful payment of the fees please save the receipt (pdf copy).
- d) A separate application form must be submitted for each programme/department/school/discipline.
- e) The last date for submitting the online applications is **27-11-2024 (05:00 PM)**.
- f) Candidates should check the website (www.nitandhra.ac.in) frequently for all future communications such as date of written test/interview, short-listed candidates etc. No separate communication will be sent in this regard.
- g) No TA/DA will be provided for attending written exam and/or interview for Ph.D. programmes.
- h) Candidates joining Ph.D. programme in December 2024 session must produce their original mark/ grade sheets, Transfer-cum-Migration certificate, NOC and all relevant certificates at the time of admission.
- i) The admission may be cancelled at any time if found the certificates are inappropriate.
- j) All the programmes are governed by the institute's rules and regulations prescribed from time-to-time.
- k) Latest guidelines issued by the Department of Higher Education, MoE, Govt of India, regarding the emoluments for the research personnel engaged in R&D programmes are available in Annexure-D.
- l) Reservation of seats: Reservations are applicable to SC/ST/OBC/Economically Weaker Section (EWS)/candidate with Physical Disability (PwD) as per the rules and regulation of the Govt. of India.
- m) The Institute reserves the right to modify/defer or cancel full/ part of the advertisement/ admission at any stage of processing without assigning any reason.

For any queries, the applicants can drop a mail to: phdadmissions@nitandhra.ac.in.

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Department-wise Research Areas

Department of Bio-Technology	Department of Chemical Engineering
<ul style="list-style-type: none"> • Application of Biopolymers in food and agriculture • Development of Prebiotics and probiotics • Applied Microbiology • Nanobiotechnology • Plant Biotechnology • Environmental Biotechnology • Phytopharmacology • Biomedical • Biomaterials • Microbial Biotechnology • Agricultural Biotechnology • Computational Biology; Bioinformatics • Chemical and Biochemical Engineering • Bioflocculant, Development of functional health drinks • Biofuels • Biological Reaction Engg and Metabolic Engg. • Bioprocess Engg -Upstream and Downstream Bioprocessing • Modelling, Simulation and Optimization of Bioprocesses • Bioreactor Design, Operation & Control and Scale-up • Enzymology • Biopharmaceuticals • Waste water treatment • Biosensors 	<ul style="list-style-type: none"> • Interfacial Science • Thin Films • Nanotechnology • Fluid Mechanics • Environmental Engineering • Membrane Technology • Separation Processes • Advanced Materials • Biofuels • Wastewater Treatment
Dept. of Civil Engineering	Dept. of Computer Science & Engineering
<ul style="list-style-type: none"> • Environmental Engineering • Remote Sensing & GIS based Hydrological Modelling • Geotechnical Engineering • Geoenvironmental Engineering • Construction Materials • Water resource Engineering 	<ul style="list-style-type: none"> • Probabilistic Graphical Models • Representation Learning • Cloud Computing • Parallel, Approximation and Randomized Algorithms • Performance Modeling • NLP <ul style="list-style-type: none"> ○ Mixed Script, Explainability, Indic Languages • ML and DL <ul style="list-style-type: none"> ○ Vision, NLP and Video Analytics ○ Object detection, Image restoration, Image classification and clustering • Distributed Computing <ul style="list-style-type: none"> ○ Query optimization, Block Chains • Quantum Computing • Metric Learning • Reinforcement Learning

<p style="text-align: center;">Department of Electrical Engineering</p>	<p style="text-align: center;">Department of Electronics & Communication Engineering</p>
<ul style="list-style-type: none"> • Application of Power Electronics • Microgrids and Electric Vehicles • Power Converters for Electric Vehicles • Distribution System Modernization • Artificial Intelligence (AI) / Machine Learning (ML) applications to Power Systems 	<ul style="list-style-type: none"> • UAVs for wireless communication • Signal processing for communication • Radar signal processing • NOMA, 6G • Microwave filter, Antennas • Microwave Sensors • Microwave vacuum electron beam devices
<p style="text-align: center;">Department of Mechanical Engineering</p>	<p style="text-align: center;">Department of Metallurgical & Materials Engineering</p>
<ul style="list-style-type: none"> • IC Engines • Emissions Control • Refrigeration and Air-Conditioning • Energy Efficient Buildings • Renewable Energy • Alternative fuels • Energy Systems • Alternative Energy Systems • Manufacturing (Forming and Casting) • Advanced and Smart Materials (Ni, Ti, Steels and other materials) for Mechanical, Thermal and Electrical Applications • Development and Properties evaluation of Metal Matrix Composites • Development and Properties evaluation of Polymer Matrix composites and Carbon - Carbon Composites • Advanced Materials • Additive Manufacturing • Advanced Machining Technologies • Manufacturing processes • Modelling and Simulation of Mechanical Systems 	<ul style="list-style-type: none"> • Powder Metallurgy • High Temperature Materials • ODS Steels • Powder Processing • Additive Manufacturing • Materials Joining • Welding Metallurgy • Corrosion of Weldments • High Temperature Oxidation • Intergranular/Stress Corrosion Cracking • Surface Engineering • Metallurgical Failure Analysis

School of Sciences (Mathematics)	School of Sciences (Physics)
<ul style="list-style-type: none"> • Wave Mechanics • Elasto-dynamics • Differential Equation • Mathematical Physics • Dynamical Systems • Thermoelasticity • Fractional Calculus • Linear Algebra • Functional Analysis • Computational Mechanics • Non-Classical Continuum Mechanics 	<ul style="list-style-type: none"> • Experimental Condensed Matter • Strongly Correlated Electron Systems • Multifunctional Properties of bulk and thin film of Magnetic Oxides, intermetallic compounds and Heusler alloys • Magnetism and Superconducting properties of bulk and thin films. • Optical and Photonic Materials • Growth of Single crystals • Luminescent glasses • Nano Phosphor materials for white LED applications • Materials for Energy harvesting Applications • Topological insulators
School of Sciences (Chemistry)	
<ul style="list-style-type: none"> • Multicomponent reactions • Molecular fluorescent sensors for detection and quantifications of toxic heavy metal ions and anions • Peptide and polysaccharide-based nanostructured materials • Synthesis of novel antimicrobial agents • Development of synthetic methods for biologically active compounds • Organic electronic materials • <i>In silico</i> drug design • Medicinal chemistry • Supramolecular chemistry • Biomaterials • Bioinformatics • Molecular modeling • Molecular spectroscopy • Organic and inorganic hybrid materials • Density functional theory (DFT) analysis for molecular structural exploration • Electrochemistry • Molecular self-assembly 	
School of Humanities & Management (English)	
<ul style="list-style-type: none"> • African American Theatre • First Nations Theatre • Diaspora Studies • Gender Studies 	

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LIST OF INTERDISCIPLINARY PROJECT PROPOSALS

Proposal No.	Project Title
1.	Waste to Wealth: Transforming pectin from agro-waste to value added nutraceuticals with potential application in food and pharma industry
2.	A Sustainable Approach for Treating Industrial Wastewater and Producing Biofuel Using Microalgae by Integrating Indigenous Membrane Technology
3.	Understanding the adsorption behaviour of co-contaminants (heavy metals, antibiotics) on Secondary Microplastics: Assessing its impact on nitrification and bacterial community profiles of Sequencing Batch Reactors
4.	Design and Development of NOMA Based Communication Frameworks for Smart Grids
5.	Enhancement of stress corrosion cracking resistance of Aero-Grade AA7XXX aluminium alloys: Experimental and Machine Learning Approach
6.	Development of FeCoV based High Entropy Alloys for Memory Applications
7.	Experimental and theoretical studies of structure, electronic and magnetic properties of quaternary Heusler alloys

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