



POST GRADUATE
PLACEMENT BROCHURE

2022-23

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

NIT

IT's NITT

Why us?

NIT Tiruchirappalli
NIRF Ranking
Awards

Learn to Think

Architecture
Chemical Engineering
Civil Engineering
Computer Applications
Computer Science and Engineering
Electrical and Electronics Engineering
Electronics and Communication Engineering
Energy and Environment Engineering
Instrumentation and Control Engineering
Mechanical Engineering
Metallurgical and Materials Engineering
Physics
Production Engineering
Process Control and Instrumentation
Management Studies

A place to call Home

Clubs
Student groups
R and R
Student's Life

Career with NITT

Training and Placement
Placement process
Placement Stats



We take your aspirations for the future seriously and give you the assistance you need to reach your best potential.



Regional Engineering College Tiruchirappalli (RECT) was started in the academic year 1964-65 and has been imparting excellent technical education ever since. It has been granted the status of Deemed University and up-graded to National Institute of Technology (NIT) in the year 2003. NIT Trichy stands as the most sought after NIT for aspirants who clear one of the most rigorous nation-wide tests of our country. With the cream of the engineering talent encompassing both students and faculty coupled with state-of-the-art facilities, it is of little wonder that NIT Trichy stands as one of the stalwarts of engineering education in the country. Our illustrious alumni, working at the forefront of technology around the world stand proof to the excellence of our institution. NIT Trichy teaches not just the science and technology of engineering, but much more than that, it inculcates in each one of its students the virtues and skills needed to make a difference in tomorrow's world.

Why

INSTITUTE OF NATIONAL IMPORTANCE

Institute of National Importance (INI) is a status that is conferred to a public higher education institution in India by an act of parliament. It has been over 51 years since NIT Trichy was established, and it is the endearing spirit of the Institute which motivates its students to aspire to be the best.

Recruit

STUDENTS

As a student of NIT Trichy, one is encouraged to become a competent technologist, an emergent leader and a proactive citizen.

@ NIT TRICHY ?

TOP ENGINEERING COLLEGE

NIT Trichy has been consistently ranked among the top 10 Engineering Colleges in the country. It was ranked as the 8th Best Technical School in India, 7th best in Placements and the best among NITS by Outlook Magazine (2019).

GLITTERING ALUMINI



1994
Rajesh Gopinathan
CEO & MD
TCS



1984
K Mahalingam
Director
TS Mahalingam group



1984
Shyam Srinivasan
MD & CEO
Federal Bank



1986
N. Chandrasekaran
Chairman
Tata Sons



1987
PTR Palanivel Thiagarajan
Minister of Finance
TN Government



1980
S Vaitheeswaran
Vice Chairman & MD
Manipal Education & Medical Group



1995
N Kamakodi
MD & CEO
City Union Bank Ltd



NIT Tiruchirappalli



1984
Srinivas K
MD & CEO
India1 Payments Ltd



1984
Ravi Viswanathan
MD
TVS Supply Chain Solutions



1986
TV Narendran
CEO & MD
Tata Steel



1980
P Srikar Reddy
MD & CEO
Sonata Software



1989
Saumen Bhaumik
CEO
Titan Eyeplus



1990
Anurag Behar
CEO
Azim Premji Foundation



1995
P. Bharathi, IAS
Chief Electoral Officer
Gujarat



1988
Anantha Radhakrishnan
CEO & MD
Infosys BPM Ltd



1990
Revathi Kant
Chief Design Officer
Titan Co Ltd



1979
R Chandrasekaran
Executive Vice Chairman (Retd)
Cognizant



1992
Raj Iyer
Chief Information Officer
US Army

1. Indian Institute of Technology, Madras
2. Indian Institute of Technology, Delhi
3. Indian Institute of Technology, Bombay
4. Indian Institute of Technology, Kanpur
5. Indian Institute of Technology, Kharagpur
6. Indian Institute of Technology, Roorkee
7. Indian Institute of Technology, Guwahati
8. **National Institute of Technology, Tiruchirappalli**
9. Indian Institute of Technology, Hyderabad
10. National Institute of Technology Karnataka, Surathkal

1st among all NITs

8th among all engineering colleges
5th among all architecture colleges

National Institutional Ranking Framework 2022, Ministry of Education

— Best Innovation Club

Hon'ble President of India Shri Ram Nath Kovind
Festival of Innovation and Entrepreneurship 2018

— FICCI University of the Year

FICCI National Education Summit 2018

— Excellence in Employability

12th FICCI Higher Education Summit 2016

— Among top 25 publicly funded University in India

Atal Ranking of Institutions on Innovations Achievements 2020

— Ranked 27th in India

QS Ranking 2021

Ranked 9th in India

Outlook Ranking 2021

Ranked 8th in India

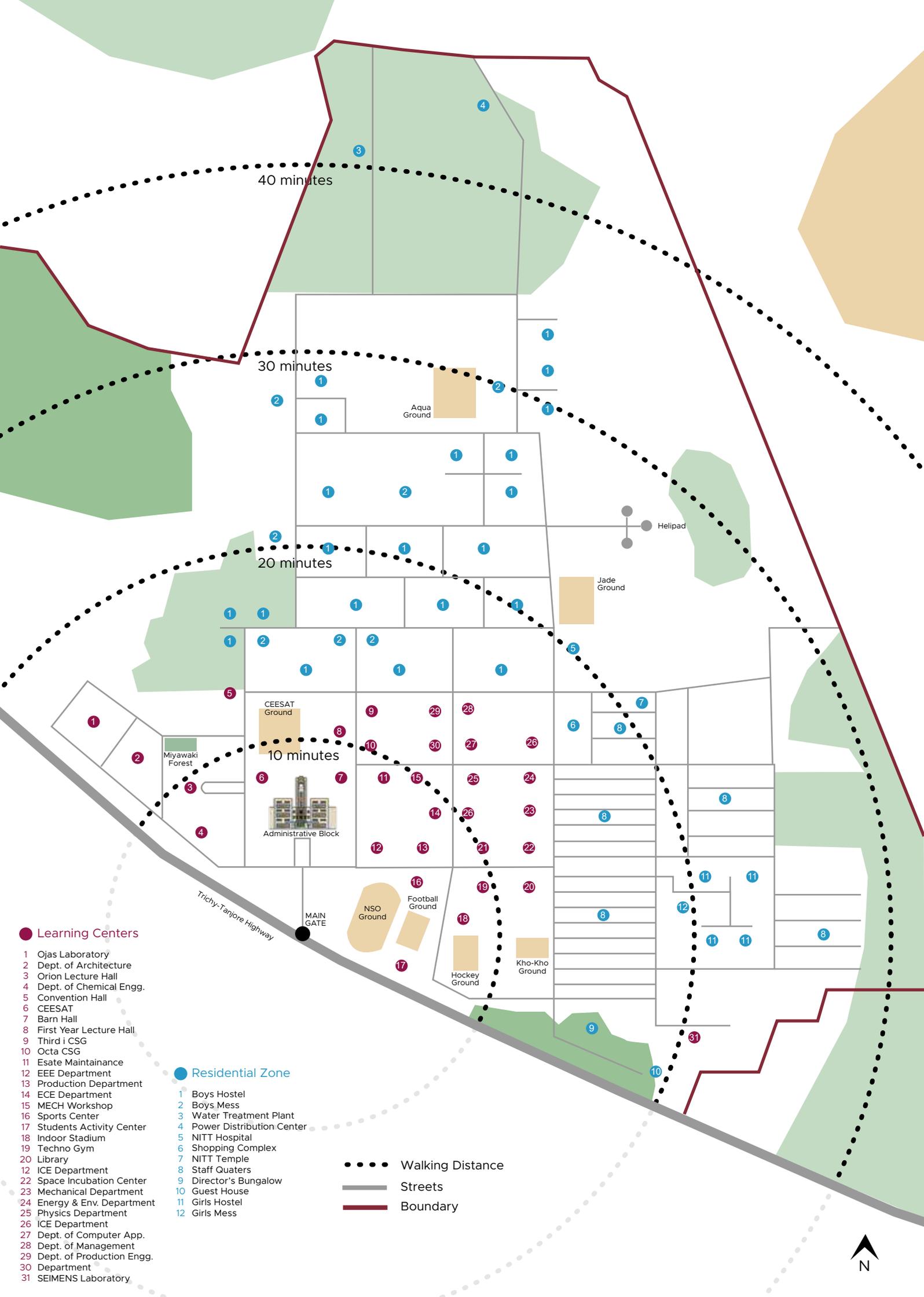
India Today Ranking 2022

Ranked 9th in India

The Week Ranking 2021

—	Number of Research Publications	11, 498
	Number of Patents	41
	Number of Journals	32, 471
	Number of Citations	1, 28, 209
	Total funding of R&C (approx)	Rs. 1.12 Billion

We're proud of our pioneering history, distinguished present and exciting future. NITT is a great place to recruit student for so many reasons



Learning Centers

- 1 Ojas Laboratory
- 2 Dept. of Architecture
- 3 Orion Lecture Hall
- 4 Dept. of Chemical Engg.
- 5 Convention Hall
- 6 CEESAT
- 7 Barn Hall
- 8 First Year Lecture Hall
- 9 Third i CSG
- 10 Octa CSG
- 11 Esate Maintenance
- 12 EEE Department
- 13 Production Department
- 14 ECE Department
- 15 MECH Workshop
- 16 Sports Center
- 17 Students Activity Center
- 18 Indoor Stadium
- 19 Techno Gym
- 20 Library
- 22 ICE Department
- 23 Space Incubation Center
- 24 Mechanical Department
- 25 Energy & Env. Department
- 26 Physics Department
- 27 ICE Department
- 27 Dept. of Computer App.
- 28 Dept. of Management
- 29 Dept. of Production Engg.
- 30 Department
- 31 SEIMENS Laboratory

Residential Zone

- 1 Boys Hostel
- 2 Boys Mess
- 3 Water Treatment Plant
- 4 Power Distribution Center
- 5 NITT Hospital
- 6 Shopping Complex
- 7 NITT Temple
- 8 Staff Quarters
- 9 Director's Bungalow
- 10 Guest House
- 11 Girls Hostel
- 12 Girls Mess

- Walking Distance
- Streets
- Boundary



Architecture

We at NIT Trichy work with students to create, imagine and design better and efficient environment for all.

The Department of Architecture in National Institute of Technology Tiruchirappalli was started in the academic year 1980-81. Over the course of 4 decades, it stands today among top 10 architecture schools in India with specific focus on Energy Efficiency and Green Building Design and Sustainability. The Department functions in all three segments: UG, PG and PHD. It is dedicated to the mission of creating professionally competent architects with human values.



Department	Program/Specialisation	Course Duration	Features
Architecture	Energy Efficient and Sustainable Architecture	2 Years	Technical understanding of thermal comfort, building performance and crafting innovative methods to save energy and reduce carbon footprint. Deep understanding of Energy Efficiency, Occupant Comfort, Building Performance and Energy Simulations.
Labs	Climate Lab • Strength of Materials Lab • Building Science Laboratory • Acoustics Lab • Lighting Lab • Model Making Lab		
Softwares	Rhino + Grasshopper, Environmental Plugins (Ladybug and Honeybee), IES, Envimet, TRNSYS, ANSYS, Diva, Dailux, Opaque, Comfen, Revit		
Curriculum	<ul style="list-style-type: none"> • Building Science and Sustainability • Building Modelling and Simulation • Building Energy, Audit and Management • Visual Comfort Assessment • Lighting Design • Energy Environment and Buildings • Energy Efficient Landscape Design • Post Occupancy Evaluation • Environment and Behaviour • Solar Passive Architecture • Statistics for Environmental Design 		
Projects	<p>Design optimization of transparent photovoltaic facades for daylight and energy performance in high rise buildings.</p> <p>A Study to optimize the Thermal Performance of Pradhan Mantri Awas Yozana -Gramin houses in hot and humid climate.</p> <p>Effect of shading and Reflection of Sunlight from nearby Building, and its impact on building performance (Gurugram, India)</p> <p>Impact of built morphology on the ventilation availability in residential buildings.</p>		



Chemical Engineering

NIT Trichy's degrees are unlike any other in the nation. They provide enormous flexibility, allowing you to create a bespoke programme.

Established in 1967, the Department of Chemical Engineering, NIT Trichy is regarded as one of the premier centers for Chemical Engineering in India by industries as well as academia. It also has the distinction of being ranked as one of the top ten Chemical Engineering Institutions in India. The department is backed by highly qualified and experienced faculty, most of who have been involved in various industrial projects and consultancy services.



Department	Program/Specialisation	Course Duration	Features
Department of Energy and Environment	Masters in Energy Engineering	2 Years	Students are imparted with knowledge in Chemical Process Equipment Design along with Chemical Reaction Engineering, Advanced Process Control and Process Modeling & Simulation. Students are also acquainted with purely industry oriented subjects like Advanced Separation Techniques and Computational Fluid Dynamics. This NBA accredited course is designed to groom students so that they extract the best talents and excel in their discipline.
Curriculum	• Chemical Reactor Analysis & Design • Advances in Fluidization Engineering • Advanced Process Control • Industrial Safety and Risk Management • Chemical Process Design • Advanced Separation Techniques • Pinch Analysis and Heat Exchange Network Design • Computational Fluid Dynamics • Process Optimization • Chemical Process Modeling and simulation laboratory • Mathematical modeling for chemical engineers, and Analytical instrumentation laboratory		
Lab	• Transfer Operations lab • Process Control laboratory with multi-process trainer and several DDC systems • Simulation packages: Fluent, Aspen Plus, MATLAB, COMSOL, GPS-X, HYSYS • Unit Operations lab • Chemical reaction • Technical analysis • Momentum transfer		
Projects	• Reduction in greenhouse gas emission with synergistic mixed matrix membrane for CO ₂ separation. • Environmental and Energy Impacts of Higher Alcohol and Biofuel Synthesis by Thermo-chemical Process (SPARC) • Ultrasonically synthesized microspheres for biomedical and food industries. (SPARC) • Design and Development of In-Situ Indigenous Soil Analysis system for effective Fertigation in Precision Farming, DST-AGROTECH • Development of new approach in waste-water treatment with self cleaning membrane technology and regeneration of membranes via natural source for restoring water ecosystem. • Biohydrogen Production from Industrial Wastewater Using Microbial Electrolysis Cell • Design of a controller for enhancing the hydrogen production in microbial electrolysis cell.		

Civil Engineering

This degree equips students to assume a leadership position, in comprehending and changing society by the many-sided view of education.

The Department of Civil Engineering has been one of the oldest and finest departments of the Institute. Established in 1964, it has been involved in making professional Civil Engineers. The highly qualified and experienced faculty along with its engineering consultancy centre has been instrumental in bringing the institute to the forefront of academic and consulting activities.



Department	Program/Specialisation	Course Duration	Features
Department of Civil Engineering	M. Tech in Geotechnical Engineering	2 Yr.	This course provides in-depth knowledge in Geotechnical Engineering to understand, evaluate and analyze existing techniques to give a solution for the Geotechnical Engineering problems critically and apply independent judgment to come up with advanced and reliable solutions. The curriculum was designed to use computer based modeling and numerical analysis of Geotechnical Engineering problems in various platforms. Also, to acquire professional and intellectual integrity, professional ethics and code of conduct.

Curriculum

- Geomechanics - Theory and Applications
- Soil Properties and Behaviour
- Foundation analysis and Design
- Dynamics of Soils and Foundations
- Applied Soil Mechanics
- Ground Improvement Techniques
- Soil Exploration and Field Testing
- Geoenvironmental Engineering
- Geosynthetic Engineering
- Geotechnics in Practice
- Analysis of Deep Foundations
- Soil Structure Interaction
- Slope Stability and Earth Dams
- Geotechnical Earthquake Engineering
- Forensic Geotechnical Engineering
- Ports and Harbour Structures Engineering
- Geotechnical Design Studio

Labs

- Cyclic Triaxial Apparatus
- Bender Element Apparatus
- Ground Penetration Radar
- Dynamic Cone Penetration Test
- Digiconsolidometer
- Earth Resistivity Apparatus
- Hydraulic Actuator –Dynamic Loading
- Plate Load & Field Vane Shear Apparatus
- Large Scale Direct Shear Apparatus
- Light Weight Defl ectometer
- SASW
- Dynamic Soil-Structure Interaction Facilities
- Digital Direct Shear Apparatus

Projects

- Characterization of Lunar Soil Simulant for Chandrayaan Missions – ISRO Respond Project, Sponsored by URSC - ISRO, Bangalore.
- Ground Penetration Radar Study for Surface Cracks on the Runway at Chennai Airport – AAI, Chennai.
- Comprehensive Scientific Study for the Stability of Structures – IREL (India) Limited.
- Effect of Soil Water Retention Behaviour on the land use pattern for Drought Mitigation, Sponsored by SERB
- Optimization of Sustainable Polymeric Materials for a Composite Ground Modification System to Support Buildings and Road Embankments, Sponsored by SERB
- Development of 1g Laboratory Model to Study the Behavior



Department	Program/Specialisation	Course Duration	Features
Department of Civil Engineering	M. Tech in Environmental Engineering	2 Yr.	The course is aimed to develop professional engineers with leadership qualities in engineering aspects of Land & Water Management, Environmental Impact Assessment, Skills in Water Supply, Wastewater Treatment, Land Reclamation and Solute Transportation. With these skills, Graduates will be able to play a leading role in developing engineering solutions to a wide range of problems and opportunities within an ecologically sustainable context.

Curriculum

- Physico-Chemical Process for Water and Wastewater Treatment
- Biological Process design for Wastewater Treatment
- Modelling of Natural Systems
- Analytical methods for Environmental Monitoring
- Transport of Water and Wastewater
- Solid and Hazardous Waste Management
- Environmental Impact Assessment
- Water and Air Quality Models
- Environmental Process Chemistry and Microbiology
- Air pollution and Control Engineering
- Groundwater flow and contaminant transport through porous media
- Remote Sensing and GIS for Environmental Applications
- Industrial Wastewater Management
- Environmental Biotechnology

Labs

- Ion Coupled Plasma Mass Spectrophotometer (ICPMS)
- Atomic Absorption Spectrophotometer (AAS)
- UV Visible Spectrophotometer
- Gas Chromatography
- TOC Analyzer
- Ion Chromatography
- Photo Fenton Reactor
- Ultrasonicator
- Membrane Bioreactor
- Environmental Particulate Air Monitor
- Automated Cell Counter
- Muffle Furnace with microprocessor controller and Bomb Calorimeter
- Ultra-pure Water Unit
- Orbital Shaking Incubator
- Flue Gas Analyzer
- Stack Monitoring Kit
- Ambient Air Sampler
- Airborne Particle Counter
- Projection Microscope with digital camera
- Ozone Analyzer
- Key Softwares: Auto CAD, Visual MODFLOW, Arc GIS, Arc View, Arc Info, ENVI, RIAM and QUAL2E

Projects

- Scientific closure of Municipal solid waste (Capping) dumpsite and development of sanitary landfill, Salem City Corporation
- Bio-Mining of the existing Municipal solid waste at Vairapalayam and Vendipalayam Dump Site, Erode City Municipal Corporation
- Revamping of existing dumped Garbage (Legacy waste) in compost yard by biomining process, Tiruchirappalli City Corporation
- Production of PHA from oily industrial wastes by immobilized bacterial consortium
- Spatio-temporal Modelling and Analysis of Urban Heat Island Effect over Bangalore and Hyderabad cities in India using Geospatial Techniques



Department	Program/Specialisation	Course Duration	Features
Department of Civil Engineering	M. Tech in Structural Engineering	2 Yr.	The aim of this course is to fulfill the growing demand for specialists in Structural Engineering. The curriculum is designed so as to get an exposure on areas of Structural Analysis, Design, Detailing and Construction. The course also familiarises the use of general purpose and application oriented software in the field of structural engineering, finite element analysis and optimisation.
Curriculum	<ul style="list-style-type: none"> • Theory of Elasticity and Plasticity • Matrix Method of Structural Analysis • Structural Dynamics • Advanced Concrete Technology • Advanced Design of Metal Structures • Finite Element methods • Stability of structures • Seismic Design of Structures • Bridge Engineering • Forensic Engineering and Rehabilitation of Structures • Theory of Plates and Shells • Prestressed Concrete • Stochastic Processes in Structural Mechanics 		
Labs	<p>Structural Engineering Lab</p> <ul style="list-style-type: none"> • Column Testing Frame – 100 Tonnes Capacity • Lateral Load Testing Frame - 20 Tonnes Capacity, Vertical Load - 50 Tonnes Capacity • Loading Frame – 30 Tonnes Capacity • Table Vibrator • Pelletizer • Concrete Mixer 80 L • Column Testing Frame • Electrical Furnace • Computerized UTM • Data Acquisition system • Dynamic actuator (5 tonnes) • Industrial Furnace • Compression Testing Machine (310 tonnes) <p>NDT & Dynamics Lab</p> <ul style="list-style-type: none"> • Horizontal Shake Table Eccentric CAM • Vertical Shake Table 30kg Capacity • Horizontal Shake Table Cylindrical CAM • Vibrating Beam • Rapid Chloride Penetration Test Apparatus • Tuned Mass Damper • Ultrasonic Pulse Velocity Instrument • Profometer • Rebound Hammer • Corrosion Analysis Instrument • Vibration of Simple and Continuous Sup 		
Projects	<ul style="list-style-type: none"> • Analysis and Design of Large Size HRSG using Limit State Method for optimization and bringing out the salient features of Limit State Design for future application NITT-BHEL Joint Project Analysis and Design of Horizontally Spliced Steel Girders NITT-BHEL Joint Project Affordable Housing for Economically Weaker section in all Disaster-Prone Areas DST-TARE Joint Project • Proof checking of Design for the Dailmer (India) Bus plant at Oragadam and many other projects, • IOCL Terminal at Ulundurpettai, Tamilnadu– PDIL (Gol) – 2019-2020 • CPWD structural designs for various buildings – 2017-2020 • 500,000 liter capacity, two compartments, shaft supported funnel type Overhead Tank, with a height of 25m and 500,000 liter capacity, two compartments, Underground water sump. for BHEL Tirumayam, 2011 • Application of Natural Fiber Reinforced Polymers as Alternative to Synthetic Fiber Reinforced Polymers • TSAMRC (Tata Steel Advanced Materials Research Centre), - TATA STEELS, Taramani, Chennai 		



Department	Program/Specialisation	Course Duration	Features
Department of Civil Engineering	M. Tech in Transportation Engineering and Management	2 Yr.	The Master of Technology course in Transportation was started in 1971 with MHRD funding under the University of Madras. One month In-plant training program is arranged for students at the end of the second semester in various Government organizations and companies to get industrial exposure which helps to groom them into competent professionals.
Curriculum	<ul style="list-style-type: none"> • Highway Traffic Analysis and Design • Pavement Materials and Design • Urban Transportation Systems • Transportation Planning • Pavement Construction and Management • Intelligent Transportation Systems • Transportation Economics • Geospatial Techniques • Waterway Transportation • Computational Techniques in Transportation Engineering • Bridge Engineering • Traffic Flow Theory • Ground Improvement Techniques 		
Labs	<p>Pavement Engineering Lab</p> <ul style="list-style-type: none"> • Centrifuge Extractor • Bitumen Testing Kits • Roughometer • Marshall Stability Testing Apparatus • Geogauge • Field CBR tests • Plate Load Setup • Benkelman Beam Deflection Apparatus • Corelok • Film Stripping Device • Ductility Testing Machine • Rotational Viscometer (Brookfield) • Pensky Martens Flash Point Apparatus • Marshall Stability Apparatus • Dynamic Shear Rheometer • NCAT Asphalt Content Ignite <p>Intelligent Transport System Lab</p> <ul style="list-style-type: none"> • Mx Road Software • Induction Loop Detector • ANPR Camera • VISSIM Software • HDM4 Software • Transyt-15 Software • N-LOGIT 5.0 Software • ESRI's Arc GIS Software • CUBE Software • Inductive loop Detector <p>Addition</p> <ul style="list-style-type: none"> • Speed radar Gun • Variable Message sign board (VMS) • Rolling Thin Film Oven (RTFO) • Moisture Induced Sensitivity Tester • Cannon-Manning Vacuum Visometer • Permeability Tester <p>Softwares</p> <ul style="list-style-type: none"> • SPSS Software • MATLAB • R Software • GAMS 		
Projects	<ul style="list-style-type: none"> • Scientific closure of Municipal solid waste (Capping) dumpsite and development of sanitary landfill II, Salem City Corporation • Bio-Mining of the existing Municipal solid waste at Vairapalayam and Vendipalayam Dump Site, Erode City Municipal Corporation • Revamping of existing dumped Garbage (Legacy waste) in compost yard by biomining process, Tiruchirappalli City Corporation 		



Department of Computer Applications

Computers are incredibly fast, accurate, and stupid. Human beings are incredibly slow, inaccurate, and brilliant. Together they are powerful beyond imagination.

The Department of Computer Applications offers the Information Technology courses which include MCA, M.Sc. Computer Science and M.Tech Data Analytics. The Department aims to provide various computer-based knowledge and solutions to simplify the complex hurdles in the real-world scenarios. It is also committed to inculcate the IT professional skills in the students and prepare them for the corporate world ahead. The Department courses cover all the aspects of computer-based industries and thus is dedicated to developing high professionals in the field of computer applications.

The Department of computer applications is one of the pioneering departments of the institute that offers postgraduate courses in the related fields of computer science and analytics. The M. Tech Data Analytics program offered at NIT Trichy is a new addition to the institute that equips students with the analytics skills to cater to the latest demand in industry and research.



Department	Program/Specialisation	Course Duration	Features
Computer Applications	Masters in Computer Application	3 Years	The Master of Computer Applications program offered at NITT is considered to be the best in the country. The course starts with deep knowledge sessions on computer programming languages and includes advanced subjects like data analysis and cloud computing. It also has the software industry based subjects to develop soft skills as well as professional skills. The last semester is dedicated exclusively for project work. Thus, the curriculum covers diverse streams.
Curriculum	<ul style="list-style-type: none"> • C / C++ / Java / Python Programming • Design and Analysis of Algorithm • Database Management System • Data Structures • Object Oriented Analysis and Design • Operating Systems • Informal on Security • Computer Networks • Data Mining Techniques • Artificial Intelligence • Computer Organization and Architecture • Software Engineering • Distributed Technology • UNIX Shell Programming • Organizational Behaviour 		
Labs	<ul style="list-style-type: none"> • NIT Local Area Network (OCTAGON Computer Center) • Dell Power Edge Server R1950 • Platforms such as Linux, Solaris based SUN machines • HP DEC Alpha Ultra Sparc, IBM System Storage DS3500 and IBM System 2U Server Rack • DELL Optiplex 9020 MT PCs connected to NITT LAN 		
Projects	<ul style="list-style-type: none"> • Extreme Low Light Image Enhancement using Deep Learning. • Human Behaviour Analysis from Video Sequences using Deep Learning approach. • Cyber Threat Intelligence General on using Deep Learning models • Emergency Response Support System Development. • Digital Health Records Storage and Analysis. 		



Department	Program/Specialisation	Course Duration	Features
Computer Applications	Masters in Data Analytics	2 Years	M. Tech in Data Analytics is an inter-disciplinary course started at NIT Trichy in the academic year 2017-18 offered by the Department of Computer Applications in association with the Department of Management Studies (DoMS) and Department of Computer Science. The course is structured around the broad contours of analytics and computer science to equip students with knowledge and familiarity of various tools for a data scientist.

Curriculum

- Machine Learning Techniques
- Natural Language Computing
- Principles of Deep Learning
- Statistical Computing
- Next Generation Database
- Image and video analytics
- Big data analytics
- Cybersecurity and Information assurance
- Real-Time System
- High-Performance Computing
- Financial risk analytics and management
- Customer Relationship and Management

Labs

- State of art computing facility at octagon computer center with core i7 systems.
- Servers (Dell Power Edge Server R1950 rack Mount Server) which support the LAN providing a Linux/Windows environment.
- Platforms such as Linux, Solaris based SUN Machines.
- HP DEC Alpha Ultra Sparc, IBM System Storage DS3500 and IBM System 2U Server Rack.
- High-Performance Computing lab.
- Natural Language Processing and text analytics lab.
- Parallel Processing and Machine Learning Lab.
- Image and Video Analytics.
- CUDA and E-Learning.

Projects

- Machine Learning IOT based Prediction and classification of stress using wearable sensor.
- Machine Learning approach for feature interpretation and classification of genetic mutation leading to tumor and cancer.
- Number Plate recognition of vehicles.
- Corpus Generation.
- Credit card risk detection.
- Fashion Discovery Engine.



Department	Program/Specialisation	Course Duration	Features
Computer Applications	Masters in Computer Science	2 Years	This program is specifically aimed to impart quality education in the field of Computer Science. M.Sc. Computer Science is a four semesters full-time Post – Graduate program spread over two years with the first three semesters concentrating on the theoretical foundation with high-quality teaching complemented with extensive practical training and the final year concentrating on project work phase I and Phase II. The course is developed to inculcate value-based, socially committed professionalism for the overall development of research attitude and life-long learning.

Curriculum

- Mathematical Foundations of Computer Science
- Data Structures and Algorithms
- Database Technologies
- Multimedia Communications
- Advanced Operating Systems
- Data Mining and Analytics
- Problem Solving Using Python and R
- Computational Intelligence
- High-Performance Computing
- Web Computing
- Artificial Intelligence
- Pattern Recognition
- Object-Oriented Software Engineering
- Advanced Statistical Techniques for Data Science
- Internet of Things

Labs

- State of art computing facility at octagon computer center with core i7 systems.
- Servers (Dell Power Edge Server R1950 rack Mount Server) which support the LAN providing a Linux/Windows environment.
- Platforms such as Linux, Solaris based SUN Machines.
- HP DEC Alpha Ultra Sparc, IBM System Storage DS3500 and IBM System 2U Server Rack.
- Lab facilities with the latest configuration of DELL OptiPlex 9020 systems.
- Dedicated lab for carrying out research in information security, system security and network security.

Projects

- Extreme Low Light Image Enhancement using Deep Learning.
- Human Behavior Analysis from Video Sequences using Deep Learning approach.
- Cyber Threat Intelligence Generation using Deep Learning models.
- Emergency Response Support System Development.
- Digital Health Records Storage and Analysis.



Computer Science and Engineering

Computer science education fosters analytical and problem solving skills which are required in a variety of computer related jobs and beyond.

The Department of Computer Science and Engineering with its cohesive set of faculty members offers a sound program at UG and PG level. The department has 21 faculty members and all are doctorates. The curriculum is a blend of the conventional and theoretical aiming to infuse the culture of learning and exploration among students.



Department	Program/Specialisation	Course Duration	Features
Department of Computer Science and Engineering	M. Tech in Computer Science and Engineering	2 Years	The curriculum is updated regularly to keep up with the growing demands and the changing trends of the software industry and research laboratories. Research Areas in the department include Programming Languages, Computer Architecture, System Software, Networking Technologies, Artificial Intelligence, Data Analytics, and Image Processing.
Curriculum	• Mathematical Concepts of Computer Science • Advanced Data Structures and Algorithms • High Performance Computer Architecture • Advanced Network Principles and Protocols • Advanced Cryptography • Design and Analysis of Parallel Algorithms • Big Data Analytics and Mining • Advances in Operating Systems • Service Oriented Architecture & Web Security • Advanced Databases • Cloud Computing Principles • Internet of Things • Principles of Machine Learning & Deep Learning • Advanced Digital Design		
Labs	<ul style="list-style-type: none">• State - of - the - art computing facility at octagon with corei7 systems.• Servers (Dell Power Edge R910 Rack Mount Servers) which provides a LAN and a Unix/Linux environment for collaborative work• LAB facilities dedicated to students with latest configurable DELL Optiplex 9020 systems.• A dedicated lab for carrying out Information Security, Research Security and Network Security.• Dedicated lab with multicore systems for Research.• Dedicated Design Lab - RISE (Reconfigurable Intelligent System Engineering) Lab.		
Projects	<ul style="list-style-type: none">• Interdisciplinary Research Group has been established.• Studies on issues in Multi-Core Architecture.• Studies on Cyber Space Security.• Studies on Big Data Analytics and Hadoop Technologies.• Studies on Cloud Computing and Cloud Security		



Electrical & Electronics Engineering

Engineers draw on knowledge and findings from a variety of to create products and procedures throughout the academic spectrum that genuinely alter the world.

The Department of Electrical and Electronics Engineering, NIT Tiruchirappalli has grown from a modest beginning in 1964 into a large fully equipped teaching and research department. The department has highly qualified faculties and is equipped with a state of laboratories and library. The department shares its research experience through technical symposia.



Department	Program/Specialisation	Course Duration	Features
Department of Electrical and Electronics Engineering	M. Tech in Power Electronics	2 Years	This course emphasizes on the foundation and technologies of modern Power Electronics and automation of Power Systems. It deals with the state of art techniques in the design and development of power modules and power conversion. Apart from circullum necessities it also covers advanced topics in microprocessor and microcontroller application in power converters which are very much needed to meet the growing challenges in the field of Electrical Engineering.

Curriculum

- Power Converters • Power Electronic Drives • Linear & Non-Linear Systems Theory • Switched Mode Power Conversion • Electric and Hybrid Vehicles • PWM Converters & Applications • Power System Automation • Industrial Control Electronics • Principles of VLSI Design • Flexible AC Transmission Systems • Renewable Power Generation Techniques

Labs

Power Converter Laboratory :

- Microprocessor and Microcontrollers Laboratory • Power Electronic and Drives Laboratory • Electrical Machines Laboratory • Simulation software like MATLAB/SIMULINK 7.5,PSCAD 4.2, ETAP 4.0, Mipower 4.0, Power World Simulator • FPGA kit from Xilinx

Research Laboratory for M.Tech. & PhD. Project Works :

- Control System Research Lab • Hybrid Electrical Systems Lab • Networking Research Lab • Power Converters Research Lab(partly funded by NaMpet) • Power Electronics Research Lab • Power System Automa on and Control Research Lab • Solar PV Energy Conversion Research Lab • VLSI Systems Research lab

Projects

- Electronification of Ground Water Control and Conveyor Systems in Mines – Funded by Ministry of Coal, Gol.
- Development of modular multilevel converter for enhancing power quality and PV output power under partial shading conditions in Grid-connected PV system – Funded by SERB.
- Development of wireless sensor network for online monitoring & control in a smart micro grid application – DST sponsored.
- Wireless sensor node for online data transfer of parameters from electrical machines and drives – Meity, Gol sponsored.



Department	Program/Specialisation	Course Duration	Features
Department of Electrical and Electronics Engineering	M. Tech in Power Systems	2 Years	The course is designed to provide sound knowledge on various aspects of modern Power Systems with more thrust given on the key concepts of Power Electronics and automation of Power Systems. It deals with sophisticated techniques in Power System Restructuring, Forecasting and Analysis, Planning, Reliability, Security & Stability Evaluation to keep up with the ever-increasing demand in electrical power.

Curriculum

- Power System Operation and Control
- Power System Stability
- Advanced Power System Protection
- Electric and Hybrid Vehicles
- Power Quality
- Advanced Power System Analysis
- Power Conversion Techniques
- Principles of VLSI Design
- Smart Grid Technologies
- Renewable Power Generation Technologies
- Computer Relaying and Wide Area Measurement Systems.

Labs

Power Converter Laboratory :

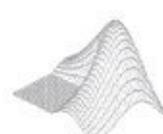
- Major equipment including HVDC Transmission line simulator, Microprocessor based Numerical Relays, FACTS Devices, Short/Long Transmission lines
- Simulation software like MATLAB/SIMULINK, PSCAD 4.2, ETAP 4.0, Mipower 4.0, Power World Simulator
- Electrical Machines Laboratory
- Power Electronics Laboratory

Research Laboratory for M.Tech. & PhD. Project Works :

- Power Systems and Smart Grid Lab.
- Power System Automation and Control Research Lab.
- Power Converters Research Lab (partly funded by NaMpet)
- Hybrid Electrical Systems Lab
- Power Electronics Research Lab
- Solar PV Energy Conversion Research Lab
- VLSI Systems Research lab

Projects

- Realization and Implementation of Wide-Area Disturbance Monitoring and Protection Methodology for Future Grids using PMUs – Sponsored by SERB- DST.
- Potential Peer to Peer Transactive Energy Markets in Indian Power Distribution Systems – Funded by SPARC-MHRD
- Implementation and Analysis of coupled coils at different Structures with misalignments for WPT EV battery charging - Sponsored by SERB-DST.
- Investigation on Data-Driven Event Detection using Indian Power Grid's Synchronophasor Data - Sponsored by SERB-DST.
- A Pilot Project on Economic Demand response management through online Monitoring- Funded by SERB.



Electronics & Communication Engineering

Electric power is everywhere present in unlimited quantities and can drive the world's machinery without the need of coal, oil, gas or any other of the common fuels.

The Department of Electronics and Communication Engineering was established in 1968. Since its establishment, the Department strives to maintain its high standard by revising its academic syllabi to suit the industrial standards. The alumni consistently feed inputs for improvement on the curriculum and research facilities. The Department has inaugurated a Centre of Excellence in Electronic Packaging & Manufacturing.



Department	Program/Specialisation	Course Duration	Features
Department of Electronics and Communication Engineering	M. Tech in Communication Systems	2 Years	The course work has been designed with curriculum laying strong emphasis on rigorous mathematical foundation. With in-depth analysis on the principles of Communication and their applications with advanced concepts and recent trends in the fields of Communication and Signal Processing. The students also undergo laboratory programs on the design and implementation of DSP modules and fiber optic devices, besides devoting their entire final year to project work.

Curriculum

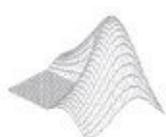
- High Speed Communication Networks
- Advanced Digital Communication
- Broadband Wireless Technologies
- Pattern Recognition and Computational Intelligence
- Optical Communication Systems
- Design of Cognitive Radio
- Microwave Integrated Circuits
- DSP Structures for VLSI
- Probability and Stochastic Processes
- Advanced Digital Signal Processing
- Photonic Integrated Circuits
- Verilog HDL
- Electromagnetic Meta-Materials
- Design of ASICs

Labs

- The course has been framed with the right blend of both hardware and software laboratories
- The modern Microwave laboratory is equipped with microwave network analyzers, a digital spectrum analyzer and software-based MIC filter design tools
- The Fiber Optics laboratory contains application specific software packages like PHOTONICS — CAD, OPTSIM
- In addition, a CAD center for MIC and RF MEMS has been established with application software such as IN3D, CST MS, FIDELITY and COMSOL
- Besides all these, COMMSIM, COVENTOR, INTELLISUITE, EMPIRE, ADS and ANSOFT HFSS are available for use. Also, WARP V3 KIT Test Bed for Wireless Systems is available.

Projects

- Development of Efficient Traffic Monitoring Analytics and Under Vehicle Scanning Inspection System, sponsored by Vandi Technologies, Singapore.
- Development of Dense Deployable Massive MIMO antenna system for 5G Wireless Communications with reduced correlation or Mutual Coupling sponsored by DST, New Delhi.
- Self-Energized UAV-assisted Communications for 5G Wireless Networks sponsored by SPARC and MHRD, India.
- Highly-Compact very large Mode-Area Hybrid Multi-Trench Optical Fiber for High-Power Industrial Lasing Applications sponsored by SERB.
- Management of entities in a distributed NFV Market place using Blockchain sponsored by Intel.
- Automatic prediction of Alzheimer's disease from Optical Coherence Tomography images of Retina using Artificial Intelligence.



Department	Program/Specialisation	Course Duration	Features
Department of Electronics and Communication Engineering	M. Tech in VLSI System	2 Years	The course work has been designed with curriculum laying strong emphasis on the rigorous mathematical foundation. With in-depth analysis of the principles of VLSI and their applications with advanced concepts and recent trends in the fields of VLSI and Signal Processing. The students also undergo laboratory programs on the design and implementation of DSP modules, besides devoting their entire final year to project work.
Curriculum	<ul style="list-style-type: none"> Basics of VLSI Analog IC Design Digital System Design Low Power VLSI Circuits Electronic Design and Automation Tools VLSI System Testing High Speed System Design Graph Theory and Optimization Techniques Architecture of DSPs DSP Structures for VLSI Verilog HDL Design of ASICs 		
Labs	<ul style="list-style-type: none"> WARP V3 KIT Test Bed for Wireless Systems Cadence Tools (Virtuoso, Encounter, Spectre, Assura) Synopsys Tools (VCS, Design Compiler, Formality, Prime Power, Astro, Jupiter XT, Hercules, StarRCXT) Mentor Graphics Tools (IC - Station, Leonardo Spectrum, Calibre, Physical Verification Tools, Parasitic Extraction Tools) FPGA Tools from XILINX and ALTERA (Maxplus II & Quartus II), HDL Designer Tool kit, ModelSim & ASIC design tools from Mentor Graphics consist of Analog & Mixed-Signal ADMS. 		
Projects	<ul style="list-style-type: none"> Energy efficient implementation of Multi-modular Exponential techniques for Public-key cryptosystems sponsored by DST, New Delhi In-depth investigation on corrosion and tribological studies on expandable engine sponsored by DRDO Full Duplex and Cognitive Radio Architectures for Spectrally efficient Communications sponsored by UGC and UKIERI Adaptive Telemetry System for Launch vehicles-demonstration of Proof of Concept sponsored by ISRO Special Manpower Development Program for Chips to System Design sponsored by MeitY, Gol Design and Implementation of Digital modules of on-Chip Speech Recognition System sponsored by MeitY, Gol. 		



Energy and Environment

Degree programmes in this discipline focus on individuals as a whole, society, and the interactions and behaviours that shape the world around them.

With the focused objective of enhancing the excellence in training, research and consultancy in Energy and Environmental science, the CEESAT- Centre for Energy and Environmental Science and Technology or DEE- Department of Energy and Environment was established under the auspices of the UK-India RECs Project: Energy Theme.



Department	Program/Specialisation	Course Duration	Features
Department of Energy and Environment	Masters in Energy Engineering	2 Years	The two-year program is designed to equip post-graduate students with a nuanced understanding of energy principles, helping evaluate energy sources concerning economic viability and environmental impacts. An industry-centric curriculum, with the provisions of a mandatory summer internship, mini-project, and a short-term course, ensures the students obtain demand-based skills in Data Science, IoT, AI, etc.
Curriculum	<ul style="list-style-type: none"> • Energy Audit and Management • Computational Fluid Dynamics • Smart Grid Systems • Design of Heat Transfer Equipment • Energy Systems Modelling and Analysis • Refrigeration and Air Conditioning • Power Source for Electric Vehicles • Solar Energy Utilisation • Wind Energy and Hydro Power Systems • Bio-Energy Technologies • Batteries and Fuel Cells • Environmental Engineering and Pollution Control 		
Lab	Curriculum Labs <ul style="list-style-type: none"> • Computational Fluid Dynamics Lab (Ansys 2022 R1) • Solar Energy Lab • Energy Audit Lab • Calibration Lab • Environmental Engineering Lab Workshop <ul style="list-style-type: none"> • Renewable Energy Application Park (REAP) 	Research Labs <ul style="list-style-type: none"> • Energy Storage Lab • Testing and Analysis Lab • Bioenergy – Algae and Bio-Technological Research lab • Waste water recovery lab • Experimental Simulation Lab 	
Projects	<ul style="list-style-type: none"> • DST Project: “Switchable polarity solvents, magnetic nanocomposites and metabolic engineering approach for enhancing Triacylglycerol content in marine microalgae towards economic biodiesel production”. • DST project under the scheme of Science for Equity Empowerment and Development division titled - “Biomass driven trigeneration system for improving the livelihood of Scheduled Tribes at Athanavur Village, Yellagiri Hills, Tamil Nadu” • Design and development of a fully automated prototype of the IITM Biomass generation system (GAIL funded) • O2 generation plant (Federal Bank Hormis Foundation) • Development of Ammonia based flexible heat pipe for space application (ISRO funded) 		

Instrumentation and Control Engineering

The scientist discovers a new type of material or energy and the engineer discovers a new use for it.

Established in the year 1993 to cater the needs of control and instrumentation engineers in industry, R&D organization and for other service sectors in the country. The department activities are focused into three major areas namely, Instrumentation & Sensor Technology, Control & Industrial Automation and Biomedical Engineering. Students have exposed to both academia and industry through courses, industrial lecture, internship and course project at outside organizations.



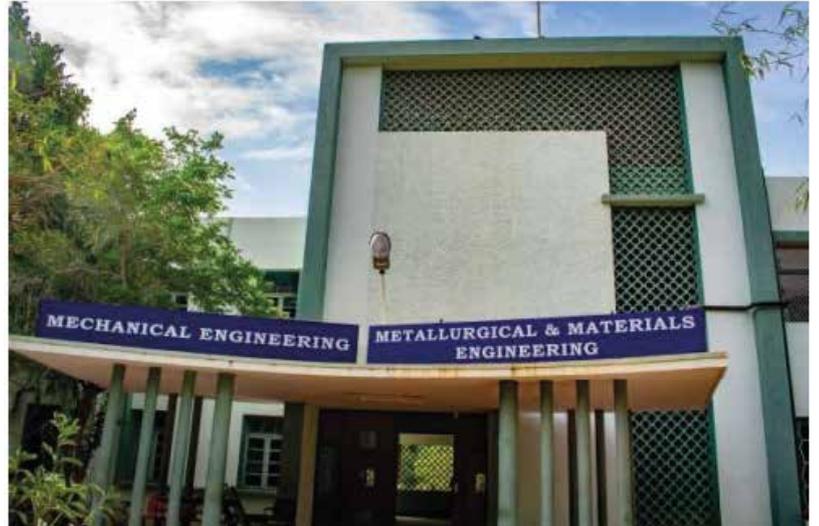
Department	Program/Specialisation	Course Duration	Features
Department of Instrumentation and Control Engineering	M. Tech in Industrial Automation	2 Years	Students have been exposed to various facilities in the department and institute through hands on training in embedded systems, cyber security, AI programming, PLC and other required expertise. Students are familiar with the concepts of Machine Learning and Deep learning.
Curriculum	<ul style="list-style-type: none"> • Measurements in Manufacturing & Process Industries • Industrial Automation Systems • AI in Industrial Automation • Cyber Security in Industrial Automation • Embedded Systems • Industrial and Data Communications • Electric Drives and Control • Robotics in Industrial Automation • Industrial Internet of Things • Computer Vision and Image Processing • Network Control System • Process Instrumentation and Automation Lab • AI and Robotics Lab • Building and Infrastructure Automation 		
Labs	<ul style="list-style-type: none"> • Industrial Automation • Control Engineering • Process Control • Embedded system • Instrumentation & Sensor Design • Modelling and Simulation • Industrial water distribution network simulator • Industrial process trainers • PLC and Distributed control system • Sensor Technology for industry 4.0 • DGX1 Server & GPU Workstations • 3D Printer and Probe station • V-Amp 16 channel EEG DAS • Digital Video EEG • COMSOL MultiPhysics 		
Projects	<ul style="list-style-type: none"> • Energy Efficient Water Distribution Management System, Ministry of Electronics and Information Technology. • Development of an Integrated Health Monitoring System for Large Engineering Structures. • Development of post-harvest handling and sensor-based smart packaging methods for the export of traditional banana varieties. 		



Mechanical Engineering

At its heart, engineering is about using science to find creative practical solutions.

The Mechanical Engineering Department has the reputation of being amongst the finest in the country since its inception. The department strives to be at par with the latest developments in the field. With dedicated, highly qualified and experienced faculty members in all streams of Mechanical Engineering, the department aims at providing world-class facilities for education and research. An interactive relationship is maintained between the students and staff which ensures effective learning.



Department	Program/Specialisation	Course Duration	Features
Department of Mechanical Engineering	M. Tech in Industrial Safety Engineering	2 Years	A postgraduate program in Industrial Safety Engineering was started in 1985, with the support of BHEL-Trichy, as a multi-disciplinary program. The course is aimed at developing managerial and engineering skills to administer Health, Safety & Environmental functions. Continually updated curriculum addressing the current and future needs and faculty team consisting of practicing HSE professionals facilitate in transforming the students to competent professionals.
Curriculum	<ul style="list-style-type: none"> • Fire Engineering and Explosion control • Safety Management • Occupational Health and Hygiene • Human Factors and Ergonomics • Regulation for Health, Safety, and Environment • Computer Aided Risk Analysis • Material Handling and PPE • Safety in the Engineering Industry • Electrical Safety • Safety in the Chemical Industry • Environmental Pollution Control • Probability and Statistics • Industrial Safety Lab • Industrial Hygiene and Ergonomics Laboratory 		
Labs	<ul style="list-style-type: none"> • PPE (Personal Protective Equipment) Lab • Safety Helmets, Safety Shields, Safety Shoes, Safety Belts, Safety Gloves, Leather Hand Sleeve, Leather Leg Guard, Ear Muff, Earplug, Safety Apron, Safety Goggles, Safety Respirators, Dust Mask • BAM Friction Tester • Impact Sensitivity Tester • DSC (Differential scanning Calorimetry) • Fume Test Chamber • Personal Air Sampler • High Volume Sampler • National Model Centre for Occupational Health Services (OHS) an ILO/UNDP Project of BHEL-T • Sound Level meters, Noise dosi Meters, Air samplers, WBGT Index meters & KATA thermometer, LUX Meter, Treadmill & ECG for measuring work capacity 		
Projects	<ul style="list-style-type: none"> • Development of nanocomposite coating on MMAW electrodes for reduction of hazardous constituents in welding fumes (Sponsored by DST-TDT-AMT). • Development and Thermal Analysis of Non-Azide Gas Generating Compositions for Automotive Airbag Systems (DST-SERB). • Experimental Investigation of Impact Initiation of Sound/Light emitting Pyrotechnic (Sponsored by ARMREB, DRDO). • Specific Electrical Conductivity of Kerosene Based Fuels (LPSC-ISRO). • Safety Audit of Powermech project sites, Tamil nadu (POWERMECH PROJECTS Ltd). 		



Department	Program/Specialisation	Course Duration	Features
Department of Mechanical Engineering	M. Tech in Thermal Power Engineering	2 Years	This programme is designed to provide a sound and in-depth knowledge in various aspects of design, manufacture, test, control and evaluation of thermal equipment .Thermal power plants have been increasingly dominant in the power generation sector. The course content aims at developing the necessary analytical and technical competence among engineers in this area.

Curriculum

- Fuels, Combustion and Emission Control
- Advanced Fluid Mechanics
- Advanced Heat Transfer
- Analysis of Thermal Power Cycles
- Analysis and Design of Pressure Vessels
- Power Plant Instrumentation
- Finite Element Method in Heat Transfer Analysis
- Boiler Auxiliaries and Performance Evaluation
- Design and Optimization of Thermal Energy Systems
- Computational Fluid Dynamics
- Advanced IC Engines
- Heat Transfer Equipment Design
- Advanced Engineering Simulation Laboratory

Labs

- Thermal Lab: Advanced instruments like integrated thermal analyzer, Temperature calibration bath and infrared thermometer
- Metrology Lab, Turbo ,Machines lab, Dynamics Lab, Heat and mass transfer Lab, Refrigeration and Air Conditioning Lab, Automobile Lab
- CAD Centre : Advanced Modeling and Analysis Packages , Auto CAD 2000 , Ansys, Unigraphics, Pro/ENGINEER ,IDEAS and Catia
- CFD packages like Fluent/Gambit, Pheonix, Online Hue Gas Analyzer and Hightech calorimeter

Projects

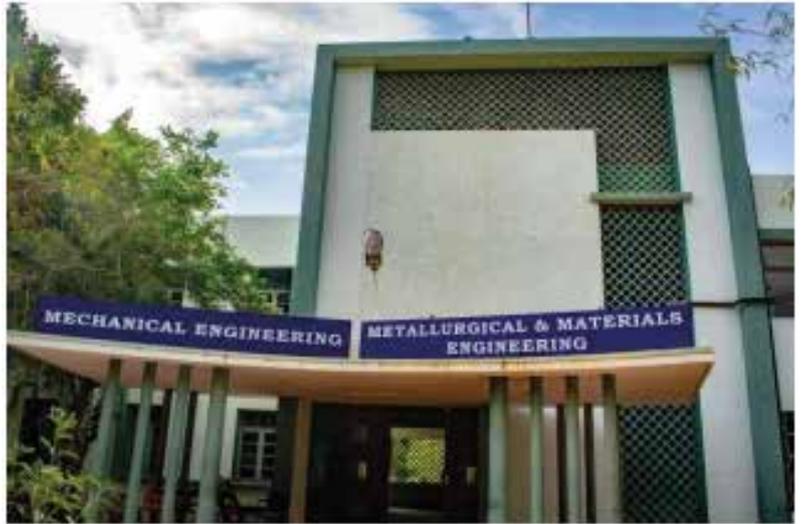
- Experimental investigation of thermal cracking due to rewetting phenomena during metal quenching process (DST-SERB)
- Study on the heat transfer characteristics of low melt alloy encapsulated PCM for satellite avionics thermal management (ISRO RESPOND).
- Experimental Investigation on Dual Fuel Engine Using Compressed Natural Gas and Pyrolysis waste engine oil (DST-SERB).
- Methanol Fed High Energy Density Fuel Cell System with Novel Catalyst and Flow Field Design (DST-UKIERI)
- In depth investigations on corrosion and tribological characteristics on expendable engine (GTRE-DRDO).
- Environmental and Energy Impacts of Higher Alcohol and Biofuel Synthesis by Thermochemical Process (MHRD –SPARC)
- BARC - DAE Technologies Display and Dissemination Facility (DTDDF) – installation and research(BARC).
- Design and development of solar photo-voltaic powered cold(DST-IPHEE)



Metallurgical & Materials Engineering

NIT Trichy is a national leader in the study of the mind, behaviour, and language.

The Department of Metallurgical and Materials Engineering was established in 1967. Since its inception, It is one of the premier centers of excellence in the field of Metallurgical and Materials Sciences. It offers three PG programs with specialization in Welding Engineering, Materials Science & Engineering, and Industrial Metallurgy. All three courses have been at racing candidates with varied engineering backgrounds. Highly qualified faculty handles the lectures and in adding on, guest lectures are delivered by eminent professionals from premier organizations such as WRI-BHEL, DRDO, and IGCAR. The department also played a key role in the launching of CECASE. The department is accredited for 5 years by the National Board of Accreditation (NBA).



Department	Program/Specialisation	Course Duration	Features
Department of Metallurgical and Materials Engineering	M. Tech in Industrial Metallurgy	2 Years	This unique course ensures that the student achieves the necessary technical expertise as a practicing metallurgist in the field of manufacturing and service industries. Students undergo summer training in industries like TATA Steel, Saint Gobain, UltraTech Cement, Cummins India, Jindal Stainless Ltd., Defence Metallurgical Research Laboratory (DMRL), and ISRO to gain practical knowledge. The unique students of this course used to work and participate in multidisciplinary environments as well as to develop entrepreneur skills.

Curriculum

- Ferrous Foundry Metallurgy • Physical Metallurgy • Metal Joining • Corrosion Engineering • Surface Engineering • NDT • Industrial Heat Treatment • Welding Technology • Foundry Technology • Mechanical Behavior of Materials • Testing, Inspection and Characterization • Metal Forming • Particulate Technology • Design and Selection of Materials • Developments in Iron Making and Steel Making • Manufacturing Technology • Additive Manufacturing • Nano-Materials & Technology

Labs

- Vacuum Arc Melting, Atmosphere Controlled High Temperature Furnaces. • UTM (60T & 100T), Rockwell Hardness Tester, Brinell Hardness Tester, Micro Hardness Tester, Impact Testing Machine, Torsion Testing Machine, Jominy Hardenability Setup • Scanning Electron Microscope • Abrasion Wear Tester, High Temperature Wear Tester. • Spark Plasma Sintering, Micro Sintering furnace

Projects

- ISRO: Structure and mechanical properties of ultrafine grained Cu-Cr/Cu-Cr-Zr-Ti alloy processed by equal channel angular processing.
- CSIR: Mechano-chemical Synthesis of Nanostructured Magnesium Silicide Thermo-electric materials by Spark Plasma Sintering
- DST-EMEO : Development of Nano-Oxide Dispersion Strengthened Ferric / Martensitic Steels by Spark Plasma Sintering and Study their High Temperature Properties
- DST : Development Nano-structured Magnesium Silicide Thermo-electric materials by Spark Plasma Sintering and Evaluation of Electric Power Generation from Thermal Systems
- NRB: Development of High Strength Cast Al-Si Alloy Based Composite Reinforced with High Entropy Alloy Particles for Naval Torpedo Applications



Department	Program/Specialisation	Course Duration	Features
Department of Metallurgical and Materials Engineering	M. Tech in Welding Engineering	2 Years	The Post Graduate program in Welding Engineering was started in 1978 in collaboration with Welding Research Institute (WRI) BHEL, Tiruchirappalli. This unique course meets the growing demands of technological expertise in the field of welding. The students go through two semesters of course work learning various subjects related to Metallurgy/ Welding both from the regular faculty of the Metallurgical and Materials Engineering Department and the experts from WRI handle theory and practical classes. The students are particularly encouraged to get a feel for various welding techniques and also get exposed to Failure Analysis.
Curriculum	<ul style="list-style-type: none"> • Welding Metallurgy • Welding Codes and Standards • Welding Processes • Welding Application Technology • Design of Weldments • Physical Metallurgy • Testing, Inspection and Characterization • Repair Welding and Reclamation • Non Destructive Testing • Corrosion Engineering • Mechanical Behaviour of Materials • Design and Selection of Materials • Additive Manufacturing 		
Labs	<ul style="list-style-type: none"> • Inverter with CMT facility, Multipurpose Welding Inverter, MicroPlasma Welding unit, FSW Machine, SMAW, GLAW with AC & DC pulsing, GMAW, Diffusion Bonding Machine, Automated GTAW facility • Scanning Electron Microscope, High Resolution Optical Microscope with Photographic Attachment, Image Analyzer, In-situ Metallography Facility 		
Projects	<ul style="list-style-type: none"> • UGC-DAE-CSR sponsored project: Welding of Titanium tube to Steel tube plate/tube by using an improved FWTIPET process • VSSC/ISRO Project: Friction Stir Welding of Aluminium Alloys for Aerospace Applications • Royal Academy UK: Application of multiscale modelling for dissimilar welding and improving graduate employability in India. A study on the properties of dissimilar weldments between P92 - S304H materials 		



Department	Program/Specialisation	Course Duration	Features
Department of Metallurgical and Materials Engineering	M. Tech in Material Science & Engineering	2 Years	This unique course ensures that the student achieves the necessary technological expertise required in metal fabrica. This unique course ensures that the student achieves the necessary technological expertise required in the fields of manufacturing, material development, and materials research. The students go through two semesters of course work learning various subjects related to Metallurgy / Material Science. The students are particularly encouraged to get a feel for the latest developments in Engineering Materials.

Curriculum

- Physical Metallurgy • Thermodynamics and Kinetics • Electrical, Magnetic and Optical Properties of Materials • Ceramic Science & Technology • Additive Manufacturing • Polymers and Composites • Non-Destructive Testing • Metallic Materials • Testing Inspection and Characterization • Design and Selection of Materials • Particulate Technology • Developments in Iron Making and Steel Making • Mechanical Behaviour of Materials • Surface Engineering • Manufacturing Technology • Metallurgical Failure Analysis • Corrosion Engineering • Nano-Materials & Technology

Labs

- Sieve Analyzer, Mineral Crusher, Simultaneous Thermal Analyzer, Viscosity Measurement System, Diamond Cutter, Metallography Specimen Preparation Equipment, 3D Cutter, Electrolytic Etching Unit • Abrasion Wear Tester, High Temperature Wear Tester • Scanning Electron Microscope, High Resolution Optical Microscope with Photographic Attachment,

Projects

- DRDO/GTRE: In depth Investigations on Corrosion and Tribological properties of Expendable Engine.
- DST : Development of Black zinc Nickel Coating as Replacement to Cadmium Coating used in Aerospace and Defence Applications.
- DST : Development of Nanostructured Titanium Implants with Bioactive and Antibacterial Composite Coatings for Dental and Maxillofacial Application.
- DRDO : Fabrication of Corrosion and Wear Resistant Ceramic Composite Coatings on Al Alloys by Plasma Electrolytic Oxidation for Defense Applications.
- DST (Indo Russian Joint Project): Corrosion and Wear Resistant Ceramic Composite Coatings on Reactor Grade Zircalloys by Plasma Electrolytic Oxidation for Nuclear Fuel Cladding Applications.
- SERB :Development of High Surface Area, Micro Porous Plasma Electrolytic Oxide Layers on Commercially Pure Titanium as Promising Systems for Photocatalytic Applications.
- ISRO: Strength Enhancement of AA2219 Aluminium Alloy Sheets/Plates by Cryo Rolling for Usage in Tankage Applications



Physics

Physics is not a subject, it's a reflection of laws of nature.

The course spans over a period of four semesters with equal emphasis on theory and hands on experience. The first two semesters are dedicated to theory, practicals and field work. The field work, where the students visit various laboratories and workshops of BHEL, exposes them to advanced NDT techniques. .



Department	Program/Specialisation	Course Duration	Features
Department of Production Engineering	M. Tech in Non-Destructive Testing	2 Years	The final two semesters are dedicated for project work at prestigious industries and research institutions like CNDE IIT Madras, NAL - Bangalore, IGCAR - Kalpakkam, NML - Jamshedpur, BARC Mumbai, ISRO Trivandrum, WRI- BHEL and NDTL- BHEL. Students concurrently get qualified for ASNT Level 2, from ISNT chapter and get registered to ISNT as student members.
Curriculum	• Visual Testing • Liquid Penetrant Testing • Magnetic Particle Testing • Eddy Current Testing • Ultrasonic Testing • Radiographic Testing, Radiation Safety • Industrial Computed Tomography • Phased Array Techniques • Time of Flight Diffraction • Ultrasonic Guided Waves • Laser Ultrasonics • Non-linear Ultrasonic • Structural Health Monitoring • Acoustic Emission Inspection • Leak Testing • Thermographic NDE • Digital Signal and Image Processing • Basics of Engineering Materials • Materials Characterization Techniques • Composite Technology • Fabrication Technology • Fracture Mechanics and Failure of Materials • Corrosion • Computational Techniques		
Conclaves	• Phased Array Ultrasonic Testing • Time of Flight Diffraction Testing • Thermography Inspection • Pulsed Echo Ultrasonic Technique (Analog and Digital). • C-scan Immersion Testing Machine. • Eddy Current Testing • Advanced Optical Inspection • Liquid penetrant Testing • Magnetic Particle Testing • Table Top Magnetic Particle Testing • X-ray Diffraction • Friction Stir Welding • X-Ray Radiographic Testing		
Projects	• Development of High Surface Area, Microporous Plasma Electrolytic Oxide Layers on Commercially Pure Titanium as Promising Systems for Photocatalytic Applications. • Development of nanostructured Titanium implants with bioactive antibacterial composite for dental and maxillofacial application • Deposition of earth abundant ternary CuZnS thin films and Fabrication of Cadmium free solar cells. • Multiple Exciton Harvesting at Zero-Dimensional/Two Dimensional (ZnO/MoS ₂) – Polymer Heterostructures. • Conversion of Waste Energy into Useful Electricity for Wireless Sensor Nodes.		

Production Engineering

To create products and procedures that effectively alter the course of history, engineers draw on thoughts and breakthroughs from a wide range of academic disciplines.

Production engineering is a professional practice of manufacturing technology with management science. The goal is to accomplish the manufacturing processes effectively and efficiently. The curriculum of Production engineering encompasses the contents with engineering materials, casting technology, machining technology, physical and mechanical joining processes, tool engineering, metrology, manufacturing systems, automation and Rapid manufacturing.



Department	Program/Specialisation	Course Duration	Features
Department of Production Engineering	M. Tech in Industrial Engineering & Management	2 Years	This course intends to shape the students in tune with the advanced Industrial Engineering tools by imparting essential imports both on theoretical and practical exposures by the inputs in advanced topics like TQM, Computer simulation, Modelling and analysis of Modern Manufacturing Systems and Planning and Control of Manufacturing Systems.

Curriculum

- Data analytics • Industrial Engineering and Productivity Management • Analysis and control of manufacturing systems • Advanced operations and research • Intelligent Manufacturing Systems • Quality and reliability engineering • Supply chain management • Modeling, Simulation and Analysis • Financial Management • Design of Experiments • Total Quality Management & Six Sigma • Project Management • Lean & Agile Manufacturing • Advanced Optimization Techniques

Labs

- Simulation Lab — SimQuick, ARENA, WITNESS, flexsim • Intelligent System Laboratory • Operations Management —TORA, GAMS, CPLEX, OM Expert • Data analytics Lab — SYSTAT., GaBi, SPSS • CAD/CAM packages — Pro/ENGINEER Wildfire, Ideas, Unigraphics, ANSYS 14.5 • Supply Chain Management Laboratory • Ergonomics Laboratory

Projects

- Development of tailor made spur gears for light weight and heavy duty power transmission systems - sponsored by SERB • Research work to establish HPTR brazing at GTRE - sponsored by Defence Res and Dev organisation • Research work for laser micro cladding of titanium and nickel based alloy shafts - sponsored by Defence Res and Dev organisation • Investigations on Modeling and implementation of Sustainable Manufacturing strategies in an automotive component manufacturing organization. • Investigation of Wire Electrical Discharge and Abrasive Water Jet Machining of Inconel 617. • Machinability studies on Incoloy 800H using carbide tools • Experimental investigation on micro/nanolaser patterning for Anti-Reflection of Silicon.



Department	Program/Specialisation	Course Duration	Features
Department of Production Engineering	M. Tech in Manufacturing Technology	2 Years	This course intends to shape the students in tune with advanced methods of manufacturing technology by imparting essential inputs on practical and theoretical exposures vogue in present day industries with proper assistance of computer during 2 years tenure of the study, by imparting inputs by way of revising conventional topics of manufacture like CAD/CAM/CIM and FMS, inputs in allied topics like Management, Maintenance, TQM, TPM & communication.
Curriculum	<ul style="list-style-type: none"> • Advanced Tooling and Automation Inspection • CNC Technology • Manufacturing Management • Heat Treatment • Modeling for Manufacturing Process • Laser in Manufacturing • Manufacturing of Non-Metallic Products • Manufacturing Automation and Mechatronics • Advanced Machining Technology • Advanced Forming Technology • Advanced Welding Technology • Tribology • Additive Manufacturing • Advanced Optimization Techniques 		
Labs	<ul style="list-style-type: none"> • CAD/CAM packages — Pro/ENGINEER Wildfire, Ideas, Unig CAD/CAM/CIM Lab : Pro/ENGINEER 2000i, Unigraphics15.0, IDEAS master series 5.0, AutoCAD 2002, AutoCAD 2000, AutoCAD R14, MATLAB 7.8, Abaqus 6.09, ANSYS 14.5. • Trainer & Advanced CNC Lab : Emco PC Turn 55, Emco PC Mill 55, Triac-3-Axis Milling Machine, EMCO Compact-CNC, HMT STC-15 Turning Centre, Hardford VMC, Leadwell CNC-Turning centre • Robotics Lab • Composite Processing Lab • Micro/Nano Engineering Lab : FIST • Mechatronics Lab • Rapid Prototype Lab • Surface engineering, Tribology and Machinability • Studies lab • Advanced welding lab • Machinability studies lab • Graphics, ANSYS 14.5 		
Projects	<ul style="list-style-type: none"> • Development of tailor made spur gears for light weight and heavy duty power transmission systems - sponsored by SERB • Research work to establish HPTR brazing at GTRE - sponsored by Defence Res and Dev organisation • Research work for laser micro cladding of titanium and nickel based alloy shapes - sponsored by Defence Res and Dev organisation • Investigations on Modeling and implementation of Sustainable Manufacturing strategies in an automotive component manufacturing organization. • Investigation of Wire Electrical Discharge and Abrasive Water Jet Machining of Inconel 617. • Machinability studies on Incoloy 800H using carbide tools. • Experimental investigation on micro/nanolaser patterning for Anti-Reflectance of Silicon. 		



Process Control & Instrumentation

At NIT Trichy our research spans an incredible breadth of scientific areas.

This course is jointly offered by the Departments of Chemical Engineering (established in 1967) and Instrumentation and Control Engineering (established in 1993). The departments had several prestigious sponsored research projects and consultancy works in the fields of Chemical Engineering and Instrumentation & Control, backed by highly qualified and experienced faculty. The students have been actively participating and presenting technical papers in various conferences across India.



Department	Program/Specialisation	Course Duration	Features
Department of Chemical Engineering & Instrumentation and Control Engineering	M. Tech in Process Control & Instrumentation	2 Years	This course was started in 1996 with a specific focus on process instrumentation and control systems. It has acquired significant importance in the process industry. The program strives to train manpower for the ever increasing demands of the industry and academics in this area. Young and dynamic faculty together with state-of-the-art lab facilities makes this program one of its kind in the country.
Curriculum	<ul style="list-style-type: none"> • PLC and its Programming • Real time and Embedded system • Controller tuning • Logic and Distributed Control systems • System Identification and Adaptive control • Advanced Process Control • Industrial Instrumentation • Computational Techniques in Control Engineering • Process Control And Instrumentation Laboratory 		
Labs	<ul style="list-style-type: none"> • Biomedical Engineering lab • Control Engineering Lab • Embedded Systems Lab • Industrial Automation Lab • MEMS Design Centre • Modeling and Simulation Lab • Process Control Lab • Smart Structures Lab • Virtual Instrumentation Lab 		
Projects	<ul style="list-style-type: none"> • Development of nanocomposite coating on MMAW electrodes for reduction of hazardous constituents in welding fumes (Sponsored by DST-TDT-AMT) • Development and Thermal Analysis of Non-Azide Gas Generating Compositions for automotive Airbag Systems (DST-SERB) • Experimental Investigation of Impact Initiation of Sound/Light emitting Pyrotechnic.(Sponsored by ARMREB,DRDO) 		



Management Studies

The NITT Department of Management is expanding future generation's entrepreneurial leaders.

Department of Management Studies, National Institute of Technology Tiruchirappalli (DoMS NIT Trichy) is among the oldest B-Schools in India, started in 1978. DoMS-NIT Trichy teaches not just the art and science of management, but instills in its students, virtues and skills needed to make a positive impact on tomorrow's world and transform it into a better future. The institute on has a strong industry relationship and the vast source of alumni is the biggest asset that DoMS-NIT Trichy can boast off . The concept of mentorship between the students and the alumni provides a lifeline for immense growth for the DoMSians.



Department	Program/Specialisation	Course Duration	Features
Department of Management Studies	Masters in Business Administration	2 Years	This course at DoMS-NIT Trichy is a veritable treasure of learning and erudition. It emphasizes more on application of management principles and techniques in modern business through continuous industrial interactions and highlights decision making for controlling and applying management concepts. With a matured lineage of consultancy and research behind them, this exclusive group of academicians is responsible for grooming raw talents into performing prodigies.
Curriculum	<ul style="list-style-type: none"> Investment Banking Investment Security Analysis and Portfolio Management Strategic Brand Management Marketing Metrics Logistics Management Innovation and R & D Management Talent Management Strategic Human Resource Development Machine Learning Techniques Big Data Analytics & Data Science Systems Analysis & Design and CASE Software Quality Management 		
Conclaves	<ul style="list-style-type: none"> PRABANDHAN'19 on Management 4.0, The Guest Lecture Series INACON'19 (Industry Academia Connect), Two-day General Management Conclave NISADYA'19 – The Annual Management Fest. 		
Projects	<ul style="list-style-type: none"> Inventory optimization for parts with intermitent and lumpy demand through zero inflated forecasting Intricacies of Forex Trade Brand engagement - Build online entity. 		





Clubs



Clubs, the word itself breathes creativity, lateral thinking, innovation and fun. The various hobby groups provide an opportunity for the students to exercise not only their grey cells but each and every talent hidden in them. Ranging from hi-tech inventions, from robots to building cars and gazing at the night sky, all things science and innovation form an integral part of this group.

They have done the college proud by producing prize-winning gadgets, artificial humans and knowledgeable speakers. They just simply define the aptest way to spend your free time in a useful

Dance, Music, Drama and Visual Arts are all mediums of expression of feelings of the inner self. They consist of gifted people who display their talents from time to time. These groups conduct various events at regular intervals to propagate the spirit of expression. They have won accolades in several events conducted in different colleges around the country.

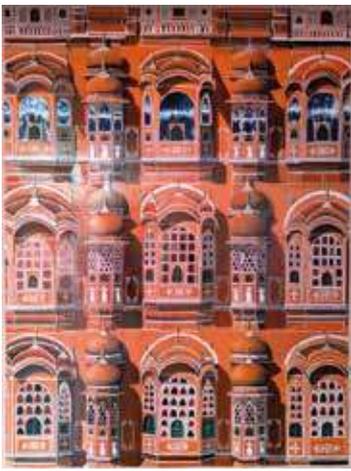
Anything that captivates the eye or that comes across as a pleasing sight, is a source of positive energy for the soul and calms the mind. The various clubs dedicated to Fine Arts in the Institute do just that.



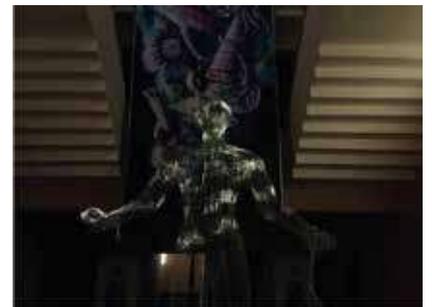
Student Groups

At NITT, we firmly believe in producing well-rounded personalities, hence it isn't all work and no play at our campus. Numerous skills and talents have been unearthed from amongst our students and to allow these talents to flourish, numerous clubs have been started for like-minded individuals to meet and polish their skills. Along with that, there are social services clubs to allow students to get in touch with reality and do their bit for the upliftment of the human race. Subdivided into various categories, you'll find clubs catering to all tastes at this campus from the highly technical ones to the social ones.





The College calendar is interspersed with numerous events whether technical or cultural, at inter departmental level or inter college level. The organisation and execution of most of these events is handled by students themselves guided by the faculty incharge. Here is a brief overview of the various events that form a part of the annual lifestyle of a NITTian.



Recreational & Relaxing





A Vibrant Students' Life



The life at the institute is a force which equips the students and prepares them for the challenges ahead. The students are the products of a transformation brought about by a rigorous academic curriculum, a healthy and interactive study culture and a broad-based orientation.

Training & Placement Cell



The Department of Training and Placement is the marketing division of the institute. Over the years, the department, acting as an interface between Institute and companies has maintained symbiotic, vibrant and purposeful relationship with industries across the country. As a result, it has built up an impressive placement record both in terms of percentage of students placed as well as number of companies visiting the campus. The department hosts companies on campus and ensures that every aspirant is assured of a bright career of their choice.

The department provides facilities for the visiting companies to conduct pre-placement talks, written tests, group discussions and interviews. Audio visual aids like laptops, LCD projectors for pre-placement talks and internet facilities for online tests will be arranged upon prior information. Conveyance from/to airport or railway station is arranged by the department. Accommodation and food is provided at the institute guest house for the company on prior intimation and the cost of these are borne by the institute. In case the company executives wish to stay outside the campus, all arrangements for their accommodation will be made, but costs are to be borne by the company.



Placement Process

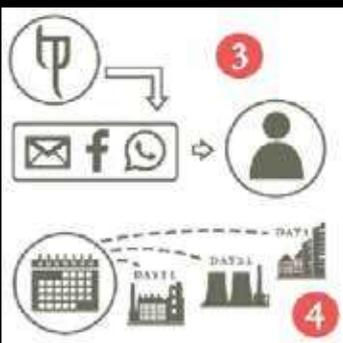
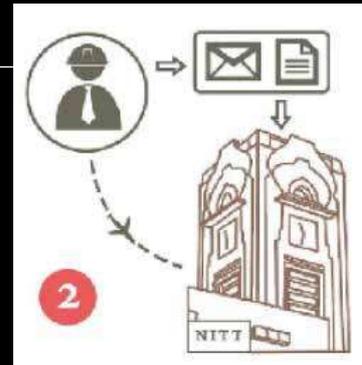


INVITATION

The Placement Office sends invitations to companies/organisations along with UG and PG brochures and Pre Visit Response (PVR) sheet through mail.

STUDENTS ARE NOTIFIED

Students are notified about the company requirements and the list of the interested candidates will be collected and forwarded to the company. Dates will be allotted for the selection process on campus.

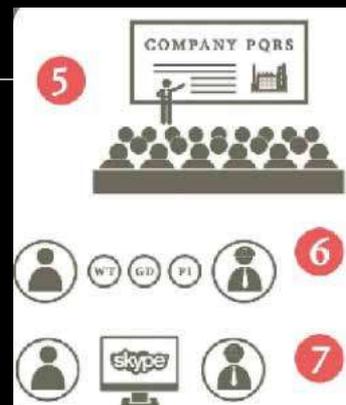


PPT AND PLACEMENT PROCESS

The Training and Placement Department will provide audio visual requirements such as laptops and LCD projectors for Pre- Placement talk before the placement procedure begins. Pre-Placement talk is followed by the placement process as per the company's requirements.

RESULTS & OFFER LETTERS

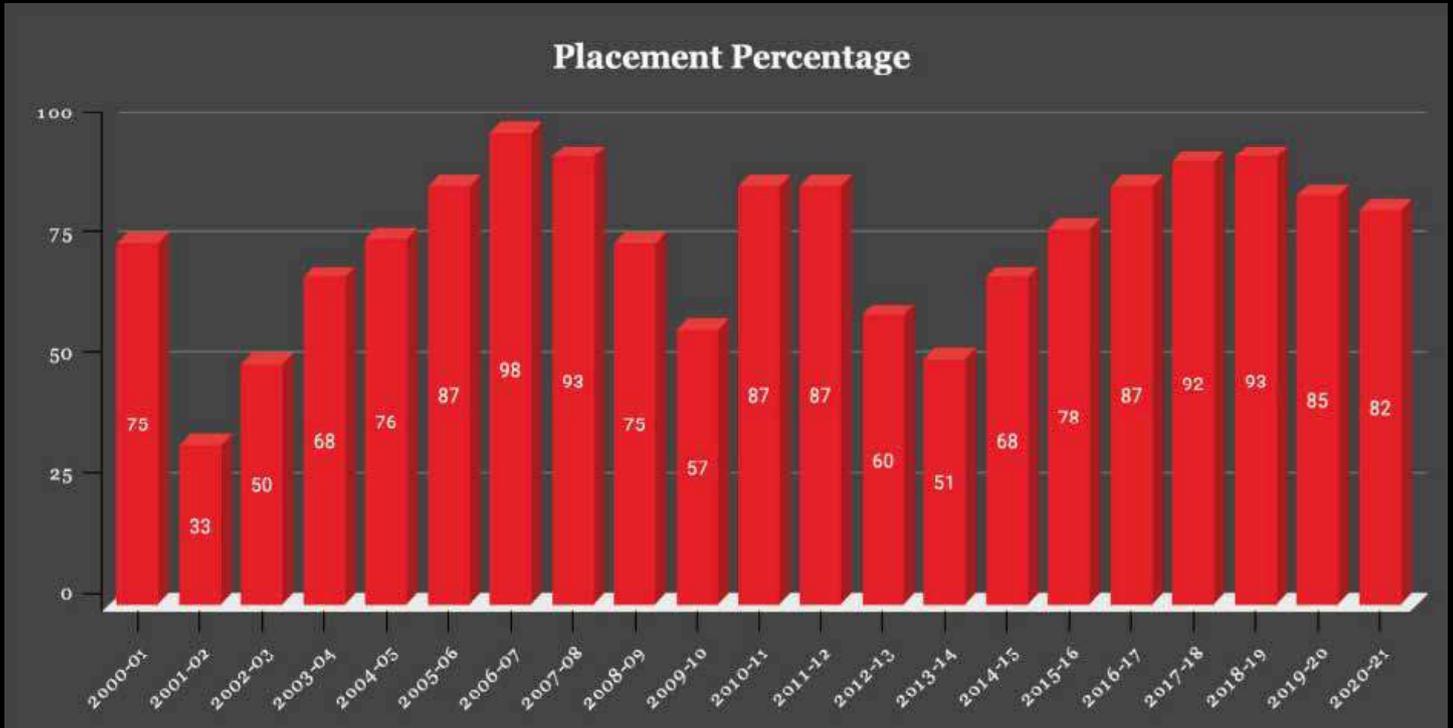
After the completion of the placement process, the company is required to give the list of the selected candidates to the Training and Placement Department on the same day itself.



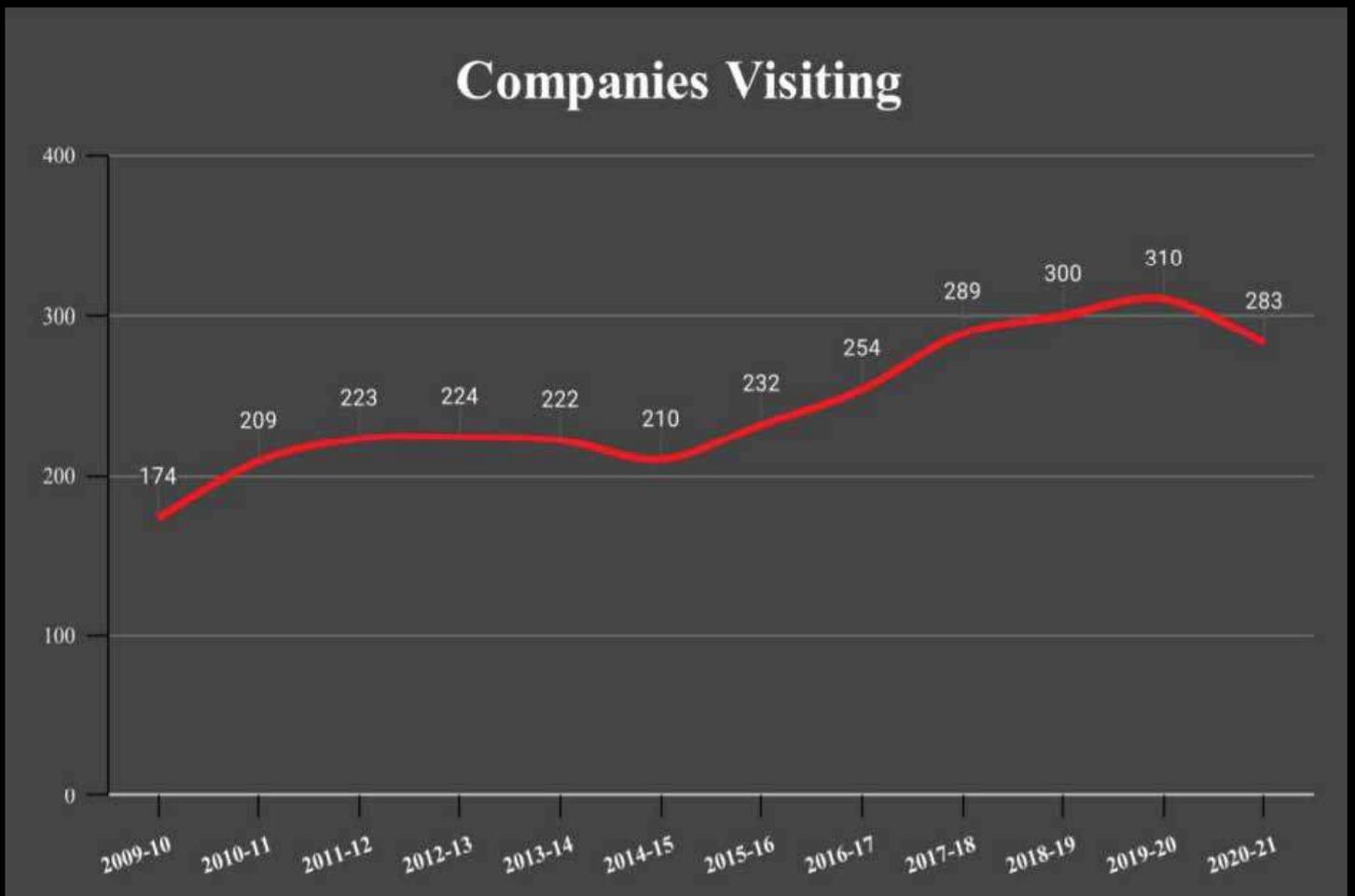
Offer letters can be sent to Training and Placement Department on mail or to the address mentioned in the last page of the brochure through courier.

Recruitment Statistics

Placement Percentage



Companies Visiting



Our Esteemed Recruiters





vivriti



Mercedes-Benz



IndianOil





Symantec

Godrej सी डेक
CDCC

SKYLARK

EPCOS

Dr.Reddy's
GARIT
Training Tomorrow's
Engineers Today

CII
Confederation of Indian Industry

IBM

Pfizer

Howden

HONDA
Honda R&D Americas

pikkolCargill

UO

Corbees



DOW

navitas

Mu Sigma
NEULAND
WHERE OPPORTUNITY BECOMES REALITY

Muthoot Finance

Thirumalai Chemicals Ltd.

NATIONAL INSTRUMENTS

NK
NAEL CONSTRUCT

NUTANIX

PARSONS BRINCKERHOFF

TEMENOS

YAZAKI

WEG

NTT Data Services

Walmart

VIGNAN'S
Deemed to be University

infineon

ZF

mobius

VE COMMERCIAL VEHICLES
A VOLVO GROUP AND EICHER MOTORS JOINT VENTURE

Mindtree
Welcome to possible

Lucid

HYUNDAI
MOBIS



MPPSC

ISUZU

KEC
KEC INTERNATIONAL LIMITED

Chola MS
RISK SERVICES

infiniti RESEARCH

MAGNITUDE SOFTWARE

KITCO
THE CONSULTANTS

infoTrellis



INNOPLCXUS

Ittiam

PATHPARTNER

EPSILON

KANTAR

MANCINI

WOne

ITC Limited

VISHNU
UNIVERSAL LEARNING

VIZAG STEEL



WHEELS INDIA LIMITED
MULTIPLEX



VERNALIS

SAP

ATLAS SYSTEMS

XSEED
AMPLE



eClerx



ICICI Bank



Enviro Control Associates (I) Pvt. Ltd. Solutions for a cleaner environment



JSL JINDAL STAINLESS

KPIT

COMMScope

dQuotient

PMI Project Management Institute

See ker



RENAULT NISSAN

VKL

SG

Valeo Service

YOKOGAWA



Forbes Marshall

TCS Digital Marketing

ITC Limited Ports and Logistics

BOLDROCK FLSMITH



WILLIAM O'NEIL + CO.

adani

deccan

HEXAGON



RAAM GROUP

FEDERAL MOGUL

KALPA-TARU

NXP

BRIDGE i2i



Modelon

JSW

CARBORUNDUM

MAVENIR

RENAULT NISSAN MITSUBISHI

Relph ENERGY

TechCorr www.techcorr.com

UnitedLex

eternis

TransUnion



ABB

ABSOLUTDATA

AVERY DENNISON

ANALOG DEVICES



ARUP



f





PASSION AT WORK



keste



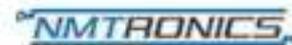
L&W Group



SOFTWARE



Hirschvogel Automotive Group



Prison Vikas (India) Limited



NDTS India (P) Limited



Uber



Aspire. Innovate & Build





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<https://www.nitt.edu/home/students/facilitiesnservices/tp/>



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