NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA
SURATHKAL

www.nitk.ac.in

...Inspiring Excellence

An Institute of National Importance...

(NITSER Act 2007, Parliament of India, 15th August, 2007)

National Institute of Technology Karnataka (NITK), Surathkal is located in Mangalore City, Karnataka State, India. Surathkal is a coastal town within the city limits of Mangalore. Mangalore is the headquarters of the coastal district of Dakshina Kannada and is an important centre of education, business and trade in Karnataka State. The presence of an all-weather major port in Mangalore has resulted in rapid industrial growth in the hinterland covering large parts of Karnataka, extending up to the state capital, Bangalore. Mangalore also possesses Special Economic Zones and has been earmarked for Information Technology Parks. Dakshina Kannada district is well known for its educational institutions. Mangalore is a popular tourist destination and is well known for pristine beaches, temples and unique cuisine. Sri U. Srinivasa Mallya, a visionary and a philanthropist, contributed immensely to the development of the coastal region of Karnataka. Among the many achievements to his credit, his effort towards establishment of the Karnataka Regional Engineering College (KREC – now NITK) at Surathkal is probably the most significant one. In recognition of his role as the founder and architect of NITK, the campus and its neighborhood are named after him as 'Srinivasnagar'.

TEAM NITK

An Amalgamation of:

13 Departments

01 School

10 Supporting Centres

270 highly qualified and dedicated faculty

496 committed supporting staff

7000 talented and motivated students

35000+ distinguished alumni

DEPARTMENTS

Chemical Engineering

Chemistry

Civil Engineering

Computer Science and Engineering

Electrical and Electronics Engineering

Electronics and Communication Engineering

Information Technology

Mathematical and Computational Sciences

Mechanical Engineering

Metallurgical and Materials Engineering

Mining Engineering

Physics

Water Resources and Ocean Engineering

SCHOOL

School of Humanities, Social Sciences and Management

CAMPUS:

- 295 acres of lush green campus set in sylvan surroundings with a beach

- Residential campus, self-sufficient in every respect

- A full-fledged Health Care Centre with visiting specialists and ambulance facility

- Shopping complex, schools, banks with ATMs, post office, cafeterias

- 1200-seater auditorium, 1800 capacity open air theatre

- Institute guest house with VIP suites and dining hall complex

- Safe & secure campus with 24X7 comprehensive security and fire safety measures

CLASSROOMS & LABORATORIES:

- 150+ Classrooms, equipped with audio-visual facility

- 170+ laboratories equipped with state-of-the-art equipment

- Dedicated and qualified laboratory technicians and staff

- Specialized laboratories in several thrust areas of research & development

- Laboratories established with industrial support and collaboration

- Laboratories certified to carry out testing and calibration

CENTRAL COMPUTER CENTRE (CCC):

- CCC maintains the campus network backbone connectivity and internet connections on 24x7 basis. It ensures the smooth functioning of the NITK Campus Network reaching academic buildings, residences, and hostel rooms through wired and wireless networks.

- LANs are individually connected to the data centre through 31 backbone switches and optical fibre cables.

- The bandwidth is being expanded from 5Gbps to 10Gbps. The Wi-Fi network spans across all academic buildings and hostels with 900 indoor access points and 48 outdoor which are controlled by the Smartzone100 controller.

- During the peak time, about 15000 IP addresses are leased within the network which is indicative of the number of devices connected.

- The NITK Data Centre housed in the CCC Ground Floor acts as an integration hub of OFC/ backbone. The Data Centre also houses the Virtual Cluster Switch, Sophos XG750 firewalls in HA mode with VPN facility and the Campus Wi-Fi Controller.

CENTRAL LIBRARY:

- The Central Library of NITK, which works 16 hours a day, provides access to more than 1.35 Lakh books, nearly 23,100 e-books, more than 100 print Journals and periodicals, 12,045 full-text e-journals, 32,806 Standards, 8,829 conference proceedings, 21 full-text online databases and 5 bibliographic databases.

- The library received Dr. L.M. Padhya Best Library Award from Indian Library Association for the year 2020 in recognition of its innovative services and advanced infrastructural facilities. It has also received "Certificate of Excellence" award from Knimbus Online Pvt. Ltd. New Delhi as one of the Top Ten libraries for the highest usage of Knimbus Remote Access portal in India.

- Our library is a core member of eShodhSindhu National Consortium of e-Resources initiated by Ministry of Education, Govt. of India. Remote Access to all the e-resources is an important service of the library introduced last year.

- Newly established e-Library Complex has cutting-edge IT facilities like Digital Learning Centre for Lecture Recording & Live Streaming of Online Programmes, Digitisation & Archiving Centre, Cyber Library to conduct hands-on training, Seminar Hall, Discussion Rooms, Laptop Zones etc. catering 24X7 to more than 7000 on campus library users with an in-house cafeteria.

HOSTELS:

- Completely residential campus with hostel facilities for 5500+ students.

- 12 Hostel blocks for boys, 5 hostel blocks for girls with power back up.

- Multiple dining halls offering variety cuisine.

- Reading room in each hostel with books and periodicals.

- All hostel rooms provided with internet connection.
- A new boys hostel with 200 triple-occupancy rooms is to be ready soon.
- A new girls hostel with 212 double-occupancy rooms is to be ready soon.
- Student participation in management of hostels and dining halls.
- Major festivals celebrated in hostels.
- Central laundry facility available.
- Student transportation facility from hostels to Lecture Hall Complexes/Departments and back.

CENTRES OF EXCELLENCE FOR SUPPORTING MULTIDISCIPLINARY RESEARCH:

- Disaster Risk Reduction
- Materials Research
- Regional Academic Centre of Space (RACS)
- Sustainable Technologies
- System Design (Virtual Instrumentation)
- Siemens CoE in Digital Manufacuring
- Wireless Sensor Networks

ASSOCIATED CENTRES

- Centre for Continuing Education (CCE)
- Centre for innovation, IPR and Industrial Consultancy (CIC)
- NITK Science and Technology Entrepreneurs' Park (STEP)

ACADEMIC PROGRAMMES:
Undergraduate (UG: B.Tech) Programmes (11):

- Artificial Intellegence
- Civil Engineering
- Chemical Engineering
- Computational and Data Science
- Computer Science & Engineering
- Electrical & Electronics Engineering
- Electronics & Communication Engineering
- Information Technology
- Mechanical Engineering
- Metallurgical & Materials Engineering
- Mining Engineering

Postgraduate (M.Tech and M. Tech (Res)) Programmes (28):

Department of Civil Engineering

1. Construction Technology & Management
2. Environmental Engineering
3. Geotechnical Engineering
4. Structural Engineering
5. Transportation Engineering

Department of Chemical Engineering

1. Chemical Engineering
2. Environmental Science & Technology
3. Industrial Biotechnology

Department of Computer Science & Engineering

1. Computer Science and Engineering
2. Computer Science and Engineering - Information Security

Department of Electrical & Electronics Engineering

1. Power & Energy Systems
2. Power Electronics & Control for Electric Vehicle

Department of Electronics & Communication Engineering

1. Communication Engineering and Networks
2. Signal Processing and Machine Learning
3. VLSI Design

Department of Information Technology

1. Information Technology

Department of Mechanical Engineering

1. Manufacturing Engineering
2. Mechanical Design
3. Mechatronics Engineering
4. Thermal Engineering

Department of Metallurgical & Materials Engineering

1. Materials Engineering
2. Nanotechnology
3. Process Metallurgy

Department of Mathematical & Computational Sciences (MACS)

1. Computational and Data Science

Department of Mining Engineering

1. Rock Excavation Technology & Management M.Tech (only by Research)

Department of Water Resources and Ocean Engineering

1. Geoinformatics
2. Marine Structures
3. Water Resources Engineering & Management

Other PG Programmes:

- Master of Business Administration (MBA) - School of Humanities, Social Science & Management
- Master of Computer Applications (MCA) - Department of MACS
- M.Sc. (Chemistry) - Department of Chemistry
- M.Sc. (Physics) - Department of Physics

Doctoral Programmes: Offered by all academic departments

ADVANTAGE NITK

- Ranked 10th among top engineering institutions in India as per NIRF ranking in 2021 and 2022 consecutively.
- Ranked 27th in Overall category of NIRF ranking in 2022, a jump of 5 places from 32nd position in 2021.
- One of the oldest technological institutions in southern India.
- Rated among the top technological institutions in India.
- Rated as the best technological institution in Karnataka.
- Excellent placement record, rated among top in the country for placements.
- Highly accomplished and well-placed alumni serving both within the country and abroad.
- Brightest students from throughout the country and abroad.
- Highly motivated and qualified faculty

  .
- Very good industry-institutional and alumni linkages.
- Proximity to Bangalore, the IT capital of India; rapidly developing Mangalore region with several existing upcoming mega industries.
- Good connectivity by road, rail and air to destinations in India and abroad.

Start-up Activities at NITK Science and Technology Entrepreneurs' Park (STEP):

- Five faculty members have instituted their start-up companies at NITK-STEP

- Two of the present students and six alumni of NITK have created their own start-up companies and are actively involved in many developmental activities.

- NITK STEP has mentored 64 school students of rural Karnataka during May 2022 for the DST INSPIRE Manak Programme and 11 of these students have received the award at the National level.

- A NITK-STEP incubated start-up named "Changepay" was selected and featured on Start-up Karnataka's "Innovations to Combat Covid-19" for their efforts to enable college campuses to set up contactless delivery platforms.

- Oxyheal Pvt. Ltd, a NITK start-up incorporated by 6 Undergraduate final year students has received a funding of Rs 9.3 lakh under the DST NIDHI Prayas Grant, from the Technology Business Incubator, KEC, Tamil Nadu. Oxyheal was incorporated on 3rd August 2020, and the grant will help them test and develop their innovative healthcare products for the market.

Patents granted to NITK in the past two years:

- Faculty members of NITK Surathkal have been awarded thirteen (13) patents in the past two years.

- Forty three (43) patent applications submitted by faculty members in the year 2021-22.

Outstanding research conducted in the Institute:

The Central Research Facility (CRF)

- The Central Research Facility (CRF) Research and Consultancy activities in the Institute get a boost as we inaugurate our new facilities: Central Research Facility and Centre of Interdisciplinary Studies. This is an enormous boost to the research infrastructure in this region. Several sophisticated pieces of equipment with cutting-edge technology have been obtained and installed at the Central Research Facility and are ready to use. The total financial outlay for this is Rs. 80 crores, supported by HEFA. The equipment installed in 2022 include:

  - Field Emission Gun Scanning Electron Microscope
  - Fourier Transform NMR Spectrometer
  - Metal 3D Printer
  - Tribometer
  - High-Velocity Air Fuel (HVAF)
  - Automatic Multi Specimen Polisher
  - Abrasive Cut off Machine

- Slow Strain Rate Test (SSRT) System
- UV Ozone Cleaning System
- Gas Chromatography
- Integrated Lab Scale Hollow Fibre Membrane spinning System
- Liquid Nitrogen Plant
- Two port Automated Inert Gas Workstation (Glove Box)
- 250 KN Servo-Hydraulic Fatigue testing Unit

- A similar facility is being planned in the domain of Cyber Physical Systems with HEFA/ Institute/ MoE funding in the current financial year. This will energize core and inter-disciplinary research in the circuit branches.

- The Indian Space Research Organization (ISRO) has set up a Regional Academic Centre for Space (RAC-S) at NITK, Surathkal in January 2020. To facilitate joint research work with eminent neighbouring institutes, NITK has signed MoUs with NIT Calicut, NIT Warangal, NIT Puducherry, NIT Andhra Pradesh, GCT Coimbatore and GEC Thrissur. Many joint project proposals with the participation of faculty members of these institutions have been submitted. All these research projects are being conducted in close collaboration with ISRO scientists to support the national Space program. Funded research projects of value up to Rs. 2 crores can be acquired by the institute from ISRO alone under this scheme every year.

- 19 MOUs signed in the year 2021-22 with several institutes / universities of repute.

- NITK is also involved actively in the DRDO-Academia programme that is being jointly conducted by DRDO and the Ministry of Education (MoE). This will allow faculty members to involve themselves actively in creating indigenous technology for defense and dual use.

- In addition to these activities, high value funded research projects are also being executed with support from Department of Heavy Industry (FAME-TPEM project). This project is in the domain of Electrical mobility and is being conducted in collaboration with M/s Aditya Auto, Bangalore.

- Another significant project is being carried out in collaboration with IIT Kanpur and National Science Foundation (USA) in the domain of 3D printing.

- Five SPARC projects and two IMPRINT projects are being coordinated at NITK.

- NITK has set up an industry supported Centre of Excellence (CoE) in Digital Manufacturing which provides added momentum to our efforts to increase training, research and consultancy services to industry. We also hope that this CoE will help us to improve the industry-institute connect and produce manpower that is well-versed with the expectations of Industry 4.0.

- A number of sponsored research projects with international collaboration with Universities in South Africa, ASEAN countries and Korea have been sanctioned in the past one year.

- We are striving to strengthen the foundation for execution of funded research projects in the institute and execute projects which contribute to the safety and wellbeing of our nation.

- Significant research grants attracted from various central and state government agencies, with the total number of ongoing sponsored research projects being 196.

- Number of students awarded PhD in the academic year 2021-2022: 126.

- NITK recognized as Centre for AICTE sponsored National Doctoral Programme; Recognized as Centre for Quality Improvement Programme (QIP) for M.Tech and PhD Programmes for sponsored teachers from other technical institutions.

- Number of SCOPUS publications is 1093; number of WoS Publications is 462 in the year 2022

- Research Fellowship Programmes planned to encourage research scientists and post-doctoral fellows.

STUDENT PLACEMENTS:

- Career Development Centre (CDC) facilitates centralized on-campus job Interviews and placements for all students.

- Excellent track record of securing well-paid jobs in premier companies in India and abroad.

- Project work and internships in prestigious industries.

- Career counselling services provided to students.

- Development of soft skills and personal effectiveness to equip students in career planning.

- During 2021-22, about 405 companies visited the campus.

- UG placements stood at 93% in 2021-22 and PG placements, at 74.3%.

- Maximum salary offered was Rs. 45.03 LPA and Average salary, Rs. 15.84 LPA.

- Some of the companies visiting the campus include Microsoft, Uber, Goldman Sachs, Amazon, Flipkart, Oracle, Morgan Stanley, Samsung R&D, Texas Instruments, Tesco, Intel Tech, Western Digital, Mercedes Benz, Hexagon, Bajaj Auto, Boeing, Ford Motors, Reliance India, Tata Motors, Deutsche Bank, JP Morgan, American Express, Indus Insights, Fractal Analytics, Impact Analytics, Deloitte, IOCL, GAIL India, HPCL. BEL, ISRO, ITI Ltd, CDAC, etc.

ALUMNI NETWORKING:

- NITK Alumni Association has a strong network across the globe with chapters spread over five continents viz. Asia, Africa, Europe, North America and Australia.

- Alumni have formed a Venture Support Cell to support and fund start-up initiatives of the Institute students/alumni.

- NITK alumni are funding the Institute faculty/ student projects, offering Internships and placements.

- Towards a Carbon Neutral Campus: Aiming to create a carbon neutral, green campus, NITK has designed and developed 11 electric vehicles, *Vidhyug*, for use by its students, faculty and staff. Meanwhile, we have also installed *Urja*, the institute's first-ever solar power charging station for e-mobility. Our alumni have been instrumental in contributing a major share of resources towards these.

SPORTS & GAMES :

- Separate Department of Physical Education established to provide platform for sports, games and physical fitness.
- International standard playfields for Hockey and Football
- Cricket field with turf pitches
- Floodlit Basketball courts of international standard
- Tennis, Volley ball, and Handball Courts
- Indoor gymkhana with Shuttle Badminton courts, Table Tennis and Snooker zones
- Well-equipped gymnasium
- Floodlit swimming pool of international standard (under renovation)

COCURRICULAR AND EXTRACURRICULAR ACTIVITIES:

- 26 student clubs for dance, music, drama, star gazing, management, entrepreneurship, photography, etc. with funding support from the Institute
- National Cadet Corps (NCC) established in 1964
- National Service Scheme (NSS) for Community Services
- Value Education Centre (International Yoga Day Celebrations)

ANNUAL EVENTS:

- *Incident:* National Level Intercollegiate Cultural Festival (Even Semester)
- *Engineer:* National Level Intercollegiate Technical Festival (Odd Semester)
- *Crescendo:* Inter-batch, Intra-Institute Cultural Festival
- Several other annual features and competitions specific to different interest groups among students

HOW TO REACH NITK:

The Institute is located 22 kms north of Mangalore city along the Kanyakumari-Mumbai National Highway 66, amid sylvan surroundings with the picturesque Western Ghats on the east and sun-kissed sands of the Arabian Sea to the west. NITK is easily accessible from all parts of the country. Being situated right on the NH 66, the Institute is very well connected by bus routes to the North and South. Mangalore is also connected by NH 48 to Bangalore and there are over 200 luxury buses plying daily between Mangalore and Bangalore. Surathkal, on the Konkan Railway (linking Mumbai to Kanyakumari), is the nearest railway station and is a stopover for most trains passing through Konkan Railway. While Surathkal and Kankanady Junction are the closest alighting points for visitors coming by train from the North, Mangalore Central is the station for many trains from South India. Mangalore International Airport is just 20 km from the campus and there are domestic flights to Mumbai, Bangalore, Hyderabad and Chennai with connections to the rest of the country. Direct International flights are available to Muscat, Dubai, Abu Dhabi, Kuwait, Bahrain and Doha.