

NIT Calicut



तमसो मा ज्योतिर्गमय

**Department of Civil Engineering**  
**National Institute of Technology Calicut**

Established in 1961

NIT Campus P.O. , Kozhikode, Kerala - 673601 India

[www.nitc.ac.in](http://www.nitc.ac.in)



**The Department of Civil Engineering** is one of the oldest Departments in this Institute. It was established at the inception stage of the Calicut Regional Engineering College (CREC), which was the forerunner to the present National Institute of Technology Calicut (NITC) in 1961. Over the years, the Civil Engineering Department has grown from a level in which only an undergraduate programme leading to a Bachelor's Degree in Civil Engineering was offered to one offering undergraduate, graduate, and research programmes. At present, the Department offers one undergraduate programme in Civil Engineering leading to the B. Tech. degree and five graduate programmes one each in Structural Engineering, Traffic and Transportation Planning, Offshore Structures, Environmental Geotechnology and Water Resources Engineering leading to the M. Tech. degree of the Institute. In addition to the above, there are a number of students pursuing research at the Department in various fields of Civil Engineering leading to Ph.D. degree. The Department is a recognized QIP center of the AICTE for both M. Tech. and Ph. D. programmes. The Department has been regularly conducting a number of short term training programmes for the benefit of faculty of technical institutions and working professionals.

The Department is also actively engaged in research and development (R&D), testing and consultancy activities. A number of R&D projects sponsored by various departments and organizations including the Ministry of Human Resources Development (MHRD) and the Department of Science and Technology (DST), AICTE, ADRB, NPOL, Coir Board, Central Water Commission and the Kerala State Council for Science Technology and Environment (KSCSTE) have been completed and many are presently in progress.

Centre for Transportation Research (CTR) is set up under the scheme "Establishment of 50 centre of excellence for Training and Research in Frontier Areas of Science and Technology (FAST)" of Ministry of Human Resource Development, Government of India with the objective of carrying out research, education, training and outreach activities in various aspects of transportation engineering.

The Department has offered and continues to offer testing and consultancy services to various government departments and organizations in both the public and private sectors. The Government of Kerala has approved the Department as an authority for checking and scrutinizing designs of public works. Government of India has approved the Department for scrutinizing the Detailed Project Reports of PradhanMantri Gram Sadak Yojana (PMGSY) scheme. Consultancy services are also being offered in all areas of Civil Engineering interest.

The laboratories of the Department are well equipped. A major modernization of various laboratories in the Department was taken up under various editions of the Technical Education Quality Improvement Program (TEQIP) of the Ministry of Human Resources Development (MHRD), Government of India.

#### **VISION OF THE DEPARTMENT**

The Vision of the Department of Civil Engineering is to be a world class academic centre for quality education and research in diverse areas of Civil Engineering with a strong social commitment.

#### **MISSION OF THE DEPARTMENT**

The Mission of the Department is to

- Impart quality education in undergraduate and post graduate levels, with strong emphasis on professional ethics and social commitment;
- Provide a scholastic environment for state-of-art research, resulting in practical applications;
- Produce highly competent and technologically capable professionals and motivated young academicians;
- Undertake professional consultancy services in diverse areas of Civil Engineering;
- Conduct knowledge exchange programmes with various stakeholders.

#### **ACADEMIC PROGRAMMES**

##### **UG and PG Programmes**

Sl. No.	Course	Year of starting
1.	B.Tech. (Civil Engineering)	1961
2.	M.Tech. (Structural Engineering)	1971
3.	M.Tech. (Traffic and Transportation Planning)	1985
4.	M.Tech. (Offshore Structures)	1987
5.	M.Tech. (Environmental Geotechnology)	2006
6.	M.Tech. (Water Resource Engineering)	2014
7.	Ph.D. (Civil Engineering)	1985

**B. Tech in Civil Engineering**

The B.Tech. programme in Civil Engineering is based on credit system. Total credit required for the completion of the programme is 160. The programme comprises of a set of basic courses, core courses, elective courses and others. It is distributed over eight semesters with two semesters per academic year. To widen the knowledge, students can opt courses from other Departments as global electives. As a part of the undergraduate programme, students undergo field trips, industrial visit, industry oriented internship etc. To enrich practical knowledge, students undergo industrial training and carry out a major project in the final year.

**M. Tech in Civil Engineering**

The four semester (two year) M.Tech. Programmes are based on the credit system. The M Tech Degree has a total credit value of 60 for the successful completion of the course. In each programme, students acquire knowledge through a set of core and elective courses. They also undergo internship and field visits. A dissertation work is the end product undertaken in the final two semesters. Every year nearly 120 students enroll for M.Tech. Programmes. The Department offers five post graduate programmes and the details are given below

**M. Tech. Programme in Structural Engineering**

The M. Tech. programme in Structural Engineering was started in the year 1971 with an intention of providing a comprehensive education and training to civil engineers using a holistic approach to structural systems engineering by emphasising and building on the commonality of engineering structures at the levels of materials, mechanics, analysis and design. The programme provides thorough training in the design principles and structural action as related to components and systems over a broad range of application areas. It also provides a thorough training in the methods of analysis, including problem formulation and the use of current mathematical and computational tools. The programme covers specialised topics in Theory of Elasticity, Earthquake Resistant Structures, Structural Dynamics, Structural Optimisation, Finite Element Analysis, Advanced Metal Structures, etc.

**M. Tech. Programme in Traffic and Transportation Planning**

The M. Tech. Programme in Traffic and Transportation Planning was started in the year 1985. The programme aims to impart futuristic and need-based technical education, and to promote engineering in the field of Transportation Engineering for working out cost-effective solutions in liaison with local authorities and to establish social relevance of research and developmental activities. Under the PMGSY (PradhanMantri Gram Sadak Yojana), and National Highway Development Programme (NHDP-Golden Quadrilateral, North-South and East-West corridors), etc. the importance given to the highway development has increased in leaps and bounds. Similarly, considerable attention is being given to the development of railways, waterways and airways. The present programme in Traffic and Transportation Planning has three broad areas of specialization namely i) Traffic Engineering ii) Transportation Planning and iii) Pavement Technology.

**M.Tech. Programme in Offshore Structures**

The goal of the programme is to prepare graduate students in civil engineering for the offshore profession having application to the challenging conditions encountered in the ocean environment. The oil industry with its crucial role in deciding the economy of the nation is shifting its exploitation strategy from land based to ocean based systems the world over. This shift in emphasis has resulted in turn in a growing need for structural engineers with expertise in design of offshore platforms and other deep-water structures, marine pipelines, towed bodies and cable systems, etc. The various major courses offered in the programme are modelling and behaviour of offshore structures, Design of offshore structures, Marine foundations, Wave hydrodynamics, Offshore Renewable energy and technology, Dynamics of floating bodies, Stochastic Processes in Structural Mechanics etc.

**M.Tech. Programme in Environmental Geotechnology**

The M. Tech. Programme in Environmental Geotechnology is an inter-disciplinary course covering geotechnical engineering and environmental engineering. The Programme will train engineers to develop environmentally sound solutions to geotechnical problems and to solve environmental engineering problems unique to soil and subsurface conditions. The Programme has its major core courses in topics dealing with geotechnical engineering, environmental protection and pollution control. A good number of electives are offered in areas such as foundation engineering in difficult soils, waste management, waste water engineering, earth quake engineering, landslide mitigation methods, etc. The project work is spread over the third and fourth semesters.

**M. Tech. Programme in Water Resources Engineering**

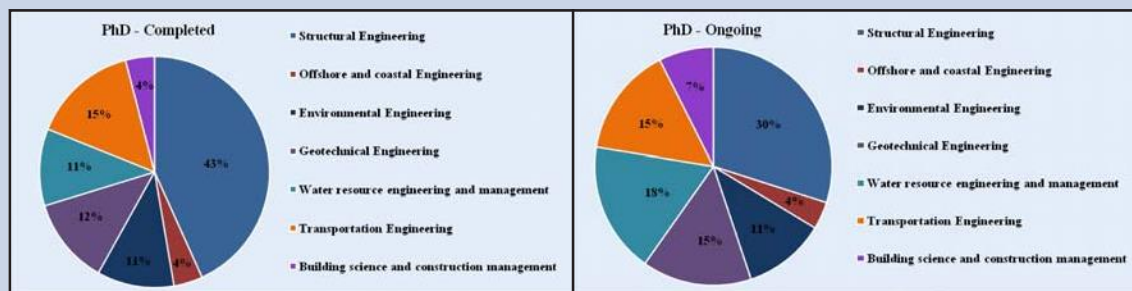
The M. Tech. Programme in Water Resources Engineering was started by the Department in the year 2014. A scientific and systematic approach is required to efficiently manage any water resources system which is characterized by scarcity or excess issues, and quality issues. The success of any water resources project depends on the sound understanding of the interactions of various components of the system, effectiveness in collection and interpretation of relevant data, and use of modern computational techniques in the solution of the problem. This PG Programme intends to prepare graduates in Civil Engineering to attain the capabilities by introducing them to topics like Advanced Fluid Mechanics, Surface and Subsurface Hydrology, Water Resources Systems Analysis and Design, Remote Sensing and its Applications in Water Resources Engineering and Computational Hydraulics and Hydrology. In addition to these core courses, six more elective courses from the related fields of Water Resources Engineering can be credited by the students depending on their aptitude and interest. A project work in the second year of the Programme provides the student with an opportunity to apply the principles and methods got familiarized in the first year to analyse and design some aspects of realistic water resources case studies.

**Research Programme (Ph.D.)**

There are a number of students pursuing research at the Department in various fields of Civil Engineering leading to PhD. The Department is a recognized QIP centre of the AICTE for both M.Tech. and PhD programmes and offers excellent opportunities for research.

**Status of the Ph. D. Programme from 2002 onwards**

Number of PhD completed	Number of PhD On-going
101	132



**Major Areas of Research**

- Structural Engineering - Seismicity studies, Fibre reinforced and Geopolymer concrete, Retrofitting, Fire resistance and Bio mechanics.
- Geotechnical Engineering - Soil dynamics, Ground improvement, Soil behaviour, Foundation engineering, Marine Geotechnique.
- Offshore and Coastal Engineering- Modelling and behaviour of Fixed, compliant and floating structures, Reliability studies and coastal Processes and Hydrodynamics
- Water Resources Engineering and Management
- Environmental Engineering – Waste water treatment, environmental modelling, pollution control
- Transportation Engineering –Travel demand modelling and forecasting, Urban transportation planning, Traffic flow modeling, Capacity and LoS, Road traffic safety, Transport systems design and evaluation, Pavement materials, design and management
- Building Sciences and Construction Management

**Major Facilities / Laboratories**

- Strength of Materials Laboratory
- Structural Engineering Laboratory
- Concrete Laboratory
- Surveying Laboratory
- Geotechnical Engineering Laboratory
- Environmental Engineering Laboratory

- Transportation Engineering Laboratory
- Pavement Engineering Laboratory
- CAD Laboratory
- PG Computing Laboratories
- Water Resources Engineering Laboratory
- Offshore Structures Laboratory
- Geology Laboratory and Museum

The Department has excellent laboratory facilities for carrying out teaching, research and consultancy activities in various disciplines of Civil Engineering. The different laboratories and equipment are

### Strength of Materials Laboratory

Compression cum Bending Testing Machine 300t, Digital Universal Testing Machine 1000 kN, Universal Testing Machine 1000 kN, 40t, 200 kN, Brinell Hardness Testing Machine, Rockwell Hardness Testing Machine, Vickers Hardness Testing Machine, Spring Testing Machine, Torsion Testing Machine, Universal Wood Testing Machine, Charpy Impact Testing Machine, Izod Impact Testing Machine, Manual Concrete Cube Testing Machine.



### Structural Engineering Laboratory

Loading Frames, 40t And 100t Capacities, Multi-channel Data Logger, Microprocessor Controlled UTM, Shake Table Assembly, Impact Testing set up, Hydraulic Jacks With Indicator, 100 kN To 1000 kN, LVDT and Electrical Resistance Strain Gauges, Demec Gauge, Digital Load Indicators, Digital Displacement Indicators, Hydraulic Pressure Cells, Proving Rings, Dead Weight Tester, Concrete Core Cutting Machine, Prestressing Jack, Electrically Operated, Pundit Ultrasonic Pulse Tester -2 nos., Profometer (Rebar Locator), Schmidt Rebound Hammer, Windsor Probe Test System, Crack Detection Microscope.



### Concrete Laboratory

Hot Air Oven Thermostatic and Electrically Operated, Los Angeles Abrasion Testing Machine, Deval's Attrition Testing Machine, Rock Cutting Machine, Accelerated Curing Tank, Humidity Chamber, Vibrating Table, Flow Table for Concrete Workability Measurement, Vee Bee Consistometer, Concrete Workability Apparatus, Needle Vibrators, Cement Autoclave, Vicat Apparatus., Vibrating Machine for Cement Testing, Sieve Shaker for Sand, Tile Flexural Strength Testing Machine, Concrete Permeability Testing Apparatus.

### Surveying Laboratory

Total Station, Micro-optic Theodolite, Vernier Theodolite, Dumpy Level, Automatic level, Subtense Bar, Prismatic Compass, Plane Table, Surveyor Compass, Metric Chain, Ranging Rods, Levelling Staff, GPS, Geo XT.



### Geotechnical Engineering Laboratory

Motorized Sieve Shaker, Sieve sets, Sedimentation test apparatus including stirrer facility – Hydrometers and Pipette, Liquid limit devices and shrinkage limit apparatus, Relative density apparatus and density bottles, Field density kit and sand pouring cylinders, Permeability test



apparatus, Digital consolidation test apparatus and consolidometer, Direct shear apparatus, Automated Cyclic triaxial testing machine, Digital computer controlled static triaxial test facility, Unconfined compression apparatus, Vane shear test apparatus, CBR test apparatus, Swell test apparatus, SPT test device with split spoon samplers and core cutters.

**Environmental Engineering Laboratory**

The Environmental Engineering Laboratory equipped with simple to sophisticated instruments capable of conducting experiments ranging from gravimetric analysis, spectroscopic analysis and microscopic analysis of environmental samples as listed here. Atomic Absorption Spectrophotometer (Flame), Gas Chromatograph with ECD and FID detectors, UV- Visible spectrophotometer, High Performance Liquid Chromatography (HPLC) System, Fourier Transform Infrared Spectroscopy (FTIR), Mini LAS, Stereomicroscope, Bench top meters for pH, ORP, EC, TDS, etc., Turbidity meter, High precision balances, Microprocessor controlled incubation chambers, Microprocessor controlled muffle furnace



**Transportation Engineering Laboratory**

Radar Speed Gun, Video Projection System, Vertical Profile Meter, Video Camera and Recorders – 6 nos, Automatic Traffic Counter-cum-Classifiers, Driver Action Judgement Tester, Electronic Distance Measuring Instrument, Infrared Traffic Data Logger – 4 nos., Depth Judgement Test, Peripheral Vision Test, Enoscope.



**Pavement Engineering Laboratory**

Dynamic Shear Rheometer, Brookfield Rotational Viscometer, Kinematic Viscometer Bath, Rolling Thin Film Oven, Pressure Aging Vessel, Degassing Oven, Superpave Gyrotory Compactor, Roller Compactor, Repeated Load Test, Dry and Wet Wheel Tracker, Electrical



Saw, Core Cutter, Digital Marshall Stability Tester, Indirect Tensile Tester, Ignition Oven (Asphalt content gauge), Corelok, Heavy Duty Sieve Shaker, Portable Wheel Weigh Pads, Non-Nuclear Asphalt Density Gauge, Fifth Wheel Bump Integrator, Field CBR test Apparatus, Portable Falling Weight Deflectometer, Benkelman Beam Test Apparatus, MERLIN, Bitumen Testing Equipment, Emulsion Testing Equipment, Aggregate Testing Equipment, Saybolt Viscometer, Hot Air Ovens,

**PG Computational Laboratory**

Desktop computers -20, Workstation Laptops - 3 nos., Projector, Software: CUBE, TRANSYT, TRANSCAD, EMME, mXRoads

**Water Resources Engineering Laboratory**

Motorized Film Applicator, Bench Scale Membrane Filtration Cell, Watershed Modelling System (WMS) – 10users, Groundwater Modelling System (GMS)– 10 users, MIKE11-MIKESHE Enterprise Package – 1no., HYDRUS 2D/3D – 20 users, MATLAB.



**Offshore Structures Laboratory**

Instrumented Wave basin of size 15m × 10m × 0.8m, wave flumes of size 40m × 2m × 2m, 110m × 4m × 4m with towing facility, wave probes, velocity probes, load, pressure and tilt sensors, accelerometers and corresponding data acquisition systems along with CFA.



**Computational Facilities**

The Department provides good computing facilities to the UG and PG students and research scholars. These consist of UG Computational Laboratory and Computational facilities for each PG Programme. To meet the academic and research needs of the students and the faculty, a high-speed Local Area Network connection through the Institute’s central facilities is provided.

**Centre for Transportation Research**

The Centre for Transportation Research (CTR) is a Centre of Excellence funded by the Ministry of Human Resources Development, under the scheme ‘Establishment of 50 Centres of Excellence in frontier areas of Science and Technology’, in the year 2013. The objectives of the Centre are to i) undertake research in various aspects of transportation and develop solutions that lead to sustainable transportation, ii) create a pool of quality conscious and qualified transportation engineers sensitive to societal requirements, iii) enhance the skills and knowledge of working transportation professionals and iv) bring awareness among public for their active and informed participation. The focus areas of CTR are Transportation Planning, Traffic Engineering and Pavement Technology. CTR initiated twenty research projects, which were identified based on the current trends in Transportation Engineering, needs of society, expertise and resources available and requirements of user agencies and nine projects were completed. The CTR possesses equipment such as Dynamic shear rheometer, Pressure ageing vessel, rolling thin film oven, Rotational viscometer, repeated load tester, Wheel tracker, Roller Compactor, Superpave Gyrotory Compactor, Moisture Induced Stress Tester, Digital Marshall stability test apparatus, TIRTL and software such as AMOS, CUBE, TRANSYT, EMME, NLOGIT, VISSIM/VISUM. All the M.Tech. students are provided separate desktop computers. CTR conducted many awareness programmes for the benefit of public. Team members of CTR are actively engaged in a variety of consultancy works, that helped them to work closely with practicing engineers and on practical problems.

**Faculty development programmes (FDP) / Workshops Conducted for last years**

FDP (conducted for past 4 years) = 14

Workshops (conducted for past 4 years) = 30

**Sponsored Research and Consultancy projects**

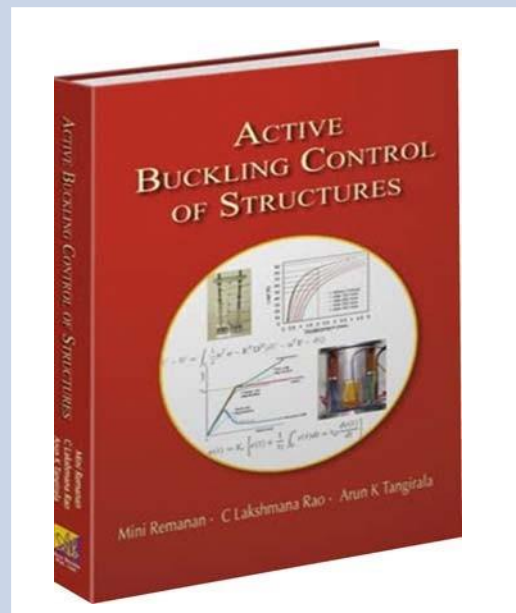
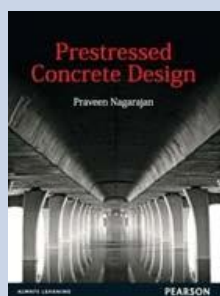
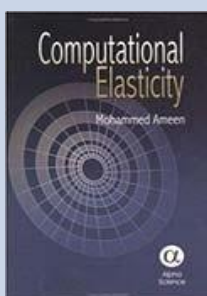
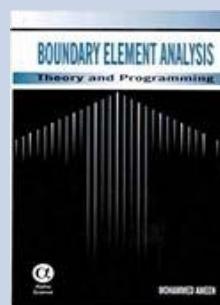
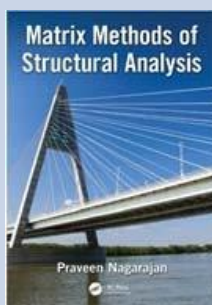
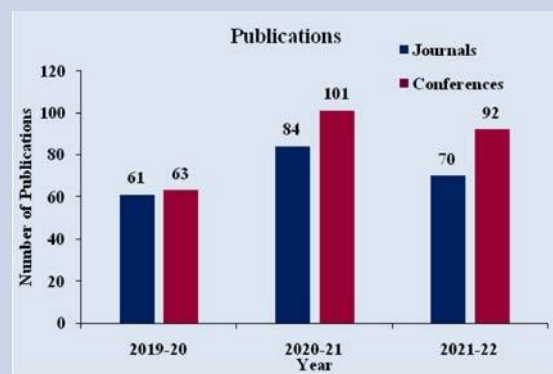
The Department is actively engaged in R&D, testing and consultancy activities. A number of R&D projects sponsored by various departments and organisations including the Ministry of Human Resources Development (MHRD) and the Department of Science and Technology (DST), Government of India, AICTE, ADRB, NPOL, Coir Board, Central Water Commission and the Kerala State Council for Science Technology and Environment (KSCSTE) have been completed and many are presently in progress. Consultancy services are also being offered in all fields of Civil Engineering interest. The following are the list of projects sponsored by various organisations in recent past years.

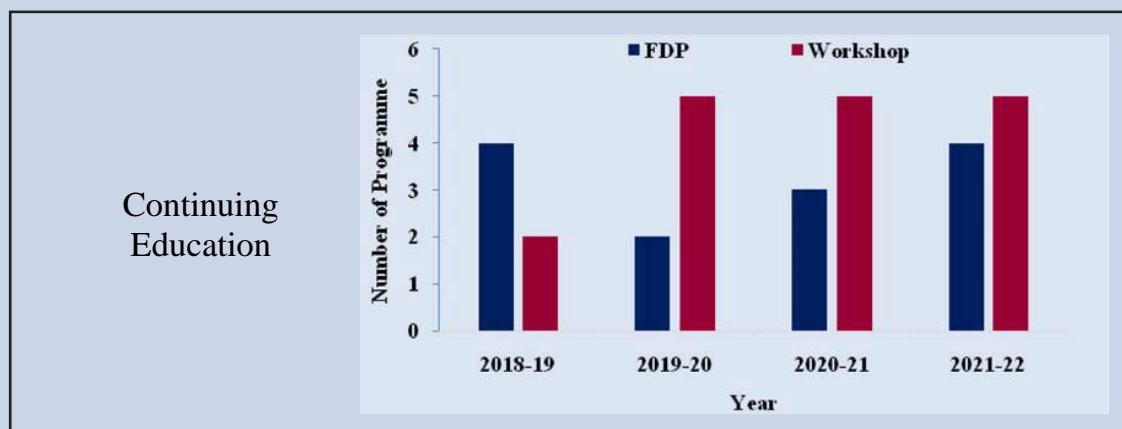
Sl. No.	Title of the research project	Investigators	Funding Agency	Funded Amount (in lakhs)	Year of grant	Current status
1	Behaviour of Steel Fibre Reinforced Rubberized Concrete Deep Beams	Dr. Praveen Nagarajan Dr. A.P. Shashikala	KSCSTE	5.9	2020	Ongoing
2	To develop a software for linear and nonlinear static analysis of structures using Applied Element Method	Dr. Praveen Nagarajan Dr. T.M. Madhavan Pillai	ISRO	13.88	2020	Ongoing



3	Investigation of shoreline stability along the Kerala coast using geospatial technologies for sustainable coastal protection measures	Dr. K.V.Anand, Dr. V. Agilan	DoECC, Kerala	13.90	2020	Ongoing
4	Design and development of an expert system for updating rainfall Intensity-Duration-Frequency curves under climate change and non-stationarity	Dr. V. Agilan	DST-SERB	27.00	2019	Ongoing
6	Sediment transport modelling in the river basins of Kerala	Dr. Santosh G.Thampi, Dr. Chithra. N.R., Dr. Sathish Kumar D.	KERI, Peechi, Thrissur, DWR, Govt. of Kerala	5.50	2019	Ongoing
7	Design and development of a real-time optical sensor for selected VOCs in air and its application for field measurements	George K. Varghese (PI), M. K. Ravi Varma (Co-PI), Abinaya S. (Co- PI)	KSCSTE	4.55	2019	Ongoing
8	Integrated electro-oxidation, electro-reduction and electrocoagulation process for the degradation of ammoniacal nitrogen in the presence and absence of carbon-based pollutants	Dr. Anantha Singh T S	SERB (Early Career Research Award (EC Engineering Sciences)	31.6	2019	Ongoing
9	Study of Long-Term Performance of Pavements Reinforced with Coir Geotextiles	Dr. MVLR Anjaneyulu, Dr. S. Chandrakaran, Dr. M. Sivakumar	Coir Board	252.01	2019	Completed
10	Image based Smart Parking Management for Intelligent Transportation Systems.	Dr. Harikrishna M. Dr. Dhanaraj K J., ECED	KSCSTE	9.45	2018	Ongoing
11	Studies on the occurrence, distribution and composition of microplastics along the Kerala coast with emphasis on its manifestation in food chain of nearshore communities	Dr. Ranjeet, CUFOS (PI), Dr. George K. Varghese (Co-PI)	SERB	39.8	2018	Ongoing
12	Flood Forecasting using Hybrid Wavelet-ANN and Wavelet-SVM Models	Dr. Chithra. N. R. (PI), Dr. Santosh. G. Thampi (Co-PI)	KSCSTE	5.9	2018	Ongoing
13	Development of steel fibre reinforced GGBS concrete and its applications in seismic-resistant design	Dr. P. Saranya, Dr. Praveen Nagarajan, Dr. A.P. Shashikala	KSCSTE	5.00	2017	Completed
14	Design and performance of encased stone column supported embankments	Dr. Anjana Bhasi	DST-SERB	39.00	2017	Ongoing
15	Capacity building in dam safety related areas	Dr. Santosh G Thampi, Dr. Sathish Kumar D.; Participating Faculty: Dr. Chithra N.R., Dr. Pramada S.K., Dr. Praveen Nagarajan, Dr. Kodi Rangaswamy, Dr. S. Chandrakaran;	Central Water Commission, Ministry of Water Resources, River Development, and Ganga Rejuvenation	250	2017	Completed
16	Development of Rubcrete Crash Barrier	Dr. Praveen Nagarajan, Dr. A.P. Shashikala, Mr. Anand Raj	Design Innovation Centre	1.00	2017	Completed
17	Feasibility studies on the use of rubcrete in concrete barriers	Dr. Praveen Nagarajan, Dr. A.P. Shashikala, Mr. Anand Raj	TEQIP-II	4.00	2016	Completed
18	Effects of steel fibre reinforced self-compacting ground granulated blast furnace slag	Dr. Praveen Nagarajan, Dr. A.P. Shashikala, Saranya. P	TEQIP-II	2.5	2016	Completed
19	Experimental study on instability due to sloshing impact on oil tanker ships	Dr. A.P. Shashikala, Poonam Mohan	TEQIP-II	1.5	2016	Completed
20	Shape Optimization of Vertical Permeable Breakwater	A.P. Shashikala, Lamanto T Somerveli	TEQIP-II	2.7	2016	Completed

21	Setting up of Centre of Excellence in Centre for Transportation Research	Dr. MVLR Anjaneyulu, Dr. S. Chandrakaran, Dr. AP Shashikala, Dr. K. Krishnamurthy Dr. M. Sivakumar	FAST Scheme of MHRD	400	2013	Completed
22	Watershed investigations in the areas adjoining in the forested lands of southern Kerala with special emphasis on tribal settlements	S.Chandrakaran	SC&ST Department Govt Of Kerala	30	2002	Completed
23	Zonation of landslide prone areas of Menachil and Manimala areas of Kottayam and idduki Districts- Geotechnical Aspects	S.Chandrakaran	Disaster Mnagement cell- Govt of Kearala	20	2003	Completed
24	Zonation of landslide prone areas of Calicut and Wayanad districts of kerala	S.Chandrakaran	MHRD	4	2004	Completed
25	Standardization of engineering properties of coir geotextiles and providing data for techno marketing	S.Chandrakaran	NCMRI, Trivandrum	12	2007	Completed
31	Studies on ground water pollution by heavy metal discharge to soil and its remedial technologies	S.Chandrakaran	KSCSTE, Trivandrum	9	2009	Completed
32	Utilization of coir pith for making building blocks and value added products	S.Chandrakaran	KSCSTE, Trivandrum	4	2014	Completed
33	Performance evaluation bio enzyme stabilized soils	S.Chandrakaran	KSCSTE, Trivandrum	13	2018	Completed
34	Stabilization of soft marine clays using lime column method	S.Chandrakaran	DST	8	1998	Completed





### Publications

The faculty members publish their research work in international and national journals, and present their work in national or international conferences. They also publish books/book chapters. On an average 50 research papers are published by the faculty every year.

### Achievements

A few of the past achievements are

- The department had taken up training of local unemployed youth for self-employment under the Nehru RozgarYoganas (NRY) funded by Kerala Urban Development Finance Corporation. The training was given in Plumbing, Carpentry, Masonry and Landscaping. About 300 youths were trained under this programme.
- The Department had three centres of excellence:
  - a) Vehicle Motion Analyzer Laboratory
  - b) Non Destructive Testing Laboratory
  - c) Biomechanics Laboratory
  - d) Centre for Transportation Research (CTR)
- The Department has been recognized as a Centre for Scrutinizing the Design of important Public Buildings, by the Government of Kerala.
- The Department generates an average Rs. 35 lakhs per year through testing and consultancy.
- The Faculty of the Department published papers in the National and International Journals and National and International Conferences on an average of about 50 papers per year.
- The Ferro-cement technology transfer: Large scale water tank of 5,000 and 10,000 litres capacity, fabricated using Ferro-cement technology was transferred to JALANIDHI of Kerala Water Authority to be used under rain water harvesting schemes.
- The Department had received two patents in the area of Bio-mechanics for the following:
  - ◆ Dynamic External Wrist Fixator
  - ◆ External Fixator Assembly for Tibial Fracture
- Community Services:
  - ◆ Popularized the cost effective Ferrocement water tanks in the rural and urban sector
  - ◆ Design and Development of water conservation techniques such as rain water harvesting and construction of check dams
  - ◆ People participation programmers of Panchayats
  - ◆ Creating awareness of traffic rules and regulations in schools
  - ◆ Actively associated with the awareness building campaign in connection with the implementation of the Model Solid Waste Disposal Scheme in Calicut Corporation
  - ◆ Involved in a few biomechanics related projects which have benefited a number of patients visiting the Physical Medicine and Rehabilitation Centre of Calicut Medical College.
  - ◆ Organize special lectures on good construction practices at the Licensed Engineers and Supervisors Federation Kozhikode
  - ◆ Skill up-gradation of rural craftsmen and women workers under TEQIP

- ◆ Conducted “Self Enrichment programme” for a selected group of first year students of the Department of Civil Engineering, in association with Centre for Research and Education for Social Transformation (CREST), Kozhikode, 22<sup>nd</sup> December to 28<sup>th</sup> December 2012
- ◆ Guided preparation of Master Plan for Avalakuttath Higher secondary school Along with Dr M.A. Naseer of Department of Architecture which was taken by the Institute as a social service project by the students of NITC
- ◆ Preparation of Master Plan for Meppiyur (Higher Secondary school) in Calicut is in Progress. NIT Calicut (CED & DAP) is mentoring the activities of planning and execution carried out by KITCO and ULCCS.
- ◆ Prepared the master plan for Spring Valley School, NIT Campus as part of the Silver Jubilee Celebrations with the help of Students from DAP and CED. This also involved total station surveying and Master plan drawings
- ◆ Carried out survey in Kunnamangalam Gramma Panchayath for the “LIFE Mission” project of Govt. of Kerala as a student project initiative. Submitted the report in January 2018.
- ◆ Carried out household survey of Meenangadi Grama Panchayath, in association with ‘Niravu’ an NGO – July 3- 10, 2017, as part of activities of National Service Scheme Cell, NIT Calicut.
- ◆ Carried out household survey of Koruthodu Grama Panchayath, as part of activities of Unnat Bharat Abhiyan – May 15 - 16, 2017, as part of activities of National Service Scheme Cell, NIT Calicut
- ◆ Carried out Blood Donation Drive, Medical Camp, Bed and Book Donation Drive and other In-campus programmes of the National Service Scheme Cell, NIT Calicut

#### **Awards / Recognitions**

- Prof . S Chandrakaran received Prof. K M Bahaiddin Award for the Distinguished Engineering teacher in Kerala -2020 with the compliments of Rs. 1 lakh and citation and Memento
- Prof .S. Chandrakaran received best Geotechnical engineering engineer Award-1998(Among SAARC Countries) awarded by Shamsher Prakash foundation , I.I.T Roorkee
- Prof S.Chandrakaran received George Oommen memorial award-1996 for the best paper awarded by Institution of engineers -1996
- Prof S.Chandrakaran received best paper awarded by Railway board -2000 awarded by Intuition of engineers -2000
- Prof S.Chandrakaran received best paper award in Race 2001 awarded by CUSAT Kerala
- Prof. Praveen Nagarajan received the ICC – Prof. V.Ramakrishnan Young Scientist award by the Indian Concrete Institute in 2017
- Prof. Praveen Nagarajan received the ICI -UltraTech award for Outstanding Young Concrete Engineer in Kerala by the Indian Concrete Institute in 2016
- Prof. M.V.L.R. Anjaneyulu, IRC Award for Best Paper on Road Research (instituted by the Bihar P.W.D), 2015
- B.Tech. project group guided by Dr. Sajith A.S. has bagged the 1st prize in the Best B.Tech. Project award instituted by Association of Engineers Kerala. The project titled as *Studies on isolators for sensitive systems housed in structures subjected to vibration* and the students involved were Abhinav R Krishnan, ShameemShajahan, ShripadMalakarjunPatil, SuhailIshack and VaradaVinodNambiar.
- Ministry of Human Resource Development, Government of India has sanctioned for setting up a Centre of Excellence in Transportation Research at the Department of Civil Engineering, NIT Calicut under the new Plan Scheme of ‘Establishment of 50 Centres of Excellence for Training and Research in Frontier Areas of Science and Technology’ with annual grant of Rs. 1.00 crore for 4 years from 2013.
- Prof. M.V.L.R. Anjaneyulu received a commendation certificate for the paper title, “Consistent Evaluation of Horizontal Curves on Two-lane Highways” at the Annual Session of Indian Roads Congress, Lucknow, India, 2022.
- Prof. A. P. Shashikala received NITCAA Cochin Chapter Award for the Best Doctoral Thesis in Engineering and Technology (Civil Engineering) from Kerala State, 2022.
- Prof. A. P. Shashikala received ICI-Ultratech Endowment Award for Outstanding Concrete Engineer of Calicut Centre, 2021.
- Prof. A. P. Shashikala received Outstanding Woman Structural Engineer of the year, Instituted by the Indian Association of Structural Engineers, 2020.
- Prof. A. P. Shashikala received National Award for the best M.Tech. Thesis in Civil Engineering, Instituted by Indian Society for Technical Education, India, 2010.
- Prof. A. P. Shashikala received MARITIME Award, Instituted by Government of India, Ministry of Shipping, Road Transport and Highways, 2005.

### List of conference / workshops / training programmes conducted

#### ■ International Conference on Materials, Mechanics and Structures (ICMMS 2020) conducted during July 14 15, 2020

The objective of the conference is to have an update on the advancements in the fields of materials, mechanics and structures, by bringing together the global research community, students, faculty and practicing engineers to a single platform to share their knowledge. The themes proposed include advanced materials, recent trends in analysis and design of structures, current design code provisions, structural control and health Monitoring, repair, retrofitting and rehabilitation of structures, bridge engineering and, special Structures. Nationally and Internationally renowned speakers from India and abroad given the keynote lectures on 20 different topics in civil engineering. Around 200 participants across the world benefitted from this conference. For more details visit: [www.icmms2020.nitc.ac.in](http://www.icmms2020.nitc.ac.in)

#### ■ Alumni lecture series conducted from May 15 to November 13, 2020

The student lead lecture series with the participation of more than 20 alumni from various batches shared their knowledge and experience among the student community

#### ■ Online short-term training program (STTP) on Tools for Transportation Data Analysis and Modelling (TTDAM 2021) from March 18 to March 23, 2021

The short-term program introduced the various new emerging tools and techniques available for data analysis in the field of transportation engineering. Research scholars, teachers, practicing engineers and planners from different institutes throughout India participated in this program and learned to apply the latest tools and techniques in transportation data analysis, particularly qualitative data, and arrive at logical convincing and effective solutions. Hands on training on different software such as AMOSS, NLOGIT, etc. was useful for participant to learn the different tools and modelling techniques for data analysis.

#### ■ 2<sup>nd</sup> Online Short-Term Training Programme on “Tools for Transportation Data Analysis & Modelling (TTDAM)” during 27<sup>th</sup> May to 1<sup>st</sup> June, 2021.

#### ■ AICTE Training and Learning (ATAL) Academy Sponsored online FDP on “Emerging Technologies for Sustainable Environmental Management” during 31<sup>st</sup> May - 4<sup>th</sup> June, 2021.

#### ■ Short Term Training Programme on “Earthquake Engineering -Basics, Code Provisions Control and Retrofitting” during July 26-30, 2021.

#### ■ 8<sup>th</sup> International Conference on “Transportation Systems Engineering and Management” (CTSEM 2021) during August 26-27, 2021 in Online mode, organised by Centre for Transportation Research, Department of Civil Engineering, NIT Calicut.

The objectives of the CTSEM are to provide an opportunity for students, research scholars, academicians, scientists and practicing professionals to present their research works, exchange ideas, learn about advancements and applications in their respective fields and thus arrive at future directions for research. The 1<sup>st</sup> of the CTSEM series was organised by the Centre for Transportation Research, NIT Calicut in 2014. CTSEM 2021 was organised by NIT Calicut, on the occasion of the diamond jubilee year of the Institute.

#### ■ Online faculty development programme on “Recent Advances in Infrastructures Developments (RAID)” during September 01-05, 2021.

#### ■ Online Short-Term Training Programme (STTP) On “Recent Advances in Marine Vehicles and Structures (RAMVS)” during October 04-08, 2021.

#### ■ Online Short-Term Training Programme (STTP) On “Advancements in Geotechnical Engineering -AGE 2021” during November 22-26, 2021.

#### ■ Short Term Training Programme on “Application of MCDM Methods in Logistics and Transportation Engineering (MMLT)” during December 01-05, 2021.

#### ■ 3<sup>rd</sup> Online Short-Term Training Programme on “Tools for Transportation Data Analysis & Modelling (TTDAM)” during January 17-21, 2022.

#### ■ Short Term Training Programme on “Roadmap for Effective Research using Advanced Techniques and Tools (REAT 2022)” during February 14-18, 2022.

#### ■ 2<sup>nd</sup> International Conference on “Materials, Mechanics and Structures (ICMMS)”, during March 10-12, 2022.

### MoUs

- Southern Railway (Palakkad Division)
- National Transportation Planning & Research Centre (NATPAC), Trivandrum
- CSIR – Central Road Research Institute, New Delhi

**Civil Engineering Association**

Civil Engineering Association (CEA) is a non-registered, non-profit organization within the Department of Civil Engineering, NIT Calicut. The members of the society include the undergraduate and postgraduate students, faculty members of the Civil Engineering department working together to help and facilitate the overall development of students pursuing Civil Engineering here. CEA provides a platform to showcase and sharpen student’s talents through a variety of events and activities planned throughout the year namely,

- Technical Fest PRITHVI’19
- Workshop on AUTOCAD, STAAD and Total Station
- Lecture Series by academicians and researchers in the field of civil engineering
- Frequent visits to various industries, construction sites and hydraulic structures
- VISWAKARMA - a platform to showcase and sharpen the students’ talents through variety of competitions
- Fresher’s orientation programme in the beginning of academic year.
- A series of mock gate exams
- National and International conferences

**Student Chapter of Indian Concrete Institute**

National Institute of Technology Calicut has started a student’s chapter of Indian Concrete Institute, a leading organisation in the field of civil engineering which excels both in academic and research. The ICI NITC chapter was inaugurated on 10th March 2014. Indian Concrete Institute is one of the leading professional bodies in India, catering to the professional needs of individuals and Organizations involved in using Concrete. It is a non-profit Organization, dedicated to the cause of disseminating knowledge on Concrete, promoting concrete technology in construction and to address the research needs on concrete. ICI embraces budding civil engineers through ICI students Chapters and provides suitable platform to interact with practicing professionals in various disciplines. The very objective of these students’ chapters is to bridge the gap between theoretical and practical knowledge.

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**List of Faculty**

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S. No.	Name	Specialization
<b>Professor</b>		
1.	Dr. T. M. Madhavan Pillai	Structural Engineering
2.	Dr.J.Sudhakumar	Building Technology
3.	Dr.M. V. L. R. Anjaneyulu	Transportation Engineering
4.	Dr. N. Sankar	Geotechnical Engineering
5.	Dr. S. Chandrakaran	Geotechnical Engineering
6.	Dr. Santosh. G. Thampi	Environmental Hydrology
7.	Dr. A. S. Sajith	Structural Engineering
8.	Dr. K. Krishnamurthy	Transportation Engineering
9.	Dr.Mohammed Ameen	Structural Engineering
10.	Dr. Praveen Nagarajan	Structural Engineering
<b>Associate Professor</b>		
12.	Dr. Chithra N. R.	Hydraulics &Water Resources Engineering
13.	Dr. George K. Varghese	Environmental Engineering
14.	Dr. Harikrishna M.	Transportation Engineering
15.	Dr. Kodi Ranga Swamy	Geotechnical Engineering
16.	Dr. Robin Davis	Structural Engineering
17.	Dr. Sathish Kumar D.	Remote Sensing & GIS, Hydrology
<b>Assistant Professor</b>		
19.	Dr. Agilan V.	Remote Sensing & GIS, Hydrology
20.	Dr. Ajeesh S. S.	Structural Engineering
21.	Dr. Anantha Singh T. S.	Environmental Engineering
22.	Dr. Anil Kumar	Geotechnical Engineering

23.	Dr. Anil Kumar Dash	Structural Engineering
24.	Dr. Anjana Bhasi	Geotechnical Engineering
25.	Dr. Arunkumar R.	Water Resources Engineering
26.	Dr. Aswathy E.V.	Environmental Engineering
27.	Dr. B. Radhika	Structural Engineering
28.	Dr. Bhaskar S.	Environmental Engineering
29.	Dr. Ganaraj K.	Geotechnical Engineering
30.	Dr. Gaurav Misuriya	Water Resources Engineering
31.	Dr. Hillol Chakravarty	Transportation Engineering (Pavement Material)
32.	Dr. Jayachandran K.	Building Technology & Construction Management
33.	Dr. K.V. Anand	Ocean Engineering
34.	Dr. Kondalraj R	Structural Engineering
35.	Dr. M. Abdul Akbar	Structural Engineering / Offshore Engineering
36.	Dr. M. Sivakumar	Transportation Engineering
37.	Dr. Madhavan K.	Petrology, Geochronology
38.	Dr. Mini Remanan	Structural Engineering
39.	Dr. Muhamed Safeer Pandikkadavath	Structural Engineering
40.	Dr. Munavar Fairouz C.	Transportation Engineering
41.	Dr. Nishant Mukund Pawar	Transportation Engineering
42.	Dr. Prateek Negi	Geotechnical Engineering (Rock Mechanics)
43.	Dr. Prethiv Kumar R.	Offshore Engineering
44.	Dr. Renjitha Mary Varghese	Geotechnical Engineering
45.	Dr. Resmi S. R.	Water Resources Engineering
46.	Dr. Rohan Bhasker	Structural Engineering
47.	Dr. S. K. Pramada	Water Resources Engineering
48.	Dr. Sanjay Singh	Environmental Engineering
49.	Dr. Seethalakshmi P.	Geotechnical Engineering
50.	Dr. Sharan Kumar Goudar	Structural Engineering
51.	Dr. Sudha Das Khan	Structural Engineering
52.	Dr. Vikas Poonia	Water Resources Engineering
53.	Dr. Yogeshwar Vijaykumar Navandar	Transportation Engineering
54.	Ms. Reesha Bharath K.	Construction Technology

**Ramanujan Fellow**

55.	Dr. Blessen Skariah Thomas	Construction Technology and Management
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**Adhoc Faculty**

56.	Dr. Sruthi T. K.	Water Resources Engineering
57.	Dr. E. Muthu Kumar	Construction Management
58.	Dr. Gopinath C.	Structural Engineering
59.	Dr. Pandu N.	Water Resources Engineering

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**Supporting Staff**

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Name	Designation
1. Mr. Sathyan P. K.	Technical Assistant
2. Mr. Noushad K. K.	Technical Assistant
3. Mr. Jeyesh Kumar	Technical Assistant
4. Mr. Sharafudheen C. T..	Technical Assistant
5. Mr. Shridhara K.	Technician
6. Mr. Ajith Augusthy	Technician
7. Mr. Akhilesh P. V.	Lab Attendant

**Adhoc Staff**

8.	Ms. Jini M. N.	Office Assistant
9.	Mr. Akhil M. L.	Office Assistant
10.	Ms. Surya P. K.	Technical Assistant
11.	Ms. Aparna V.	Technical Assistant
12.	Ms. Lansha K. P.	Technical Assistant
13.	Ms. Harsha P.	Technical Assistant
14.	Mr. Asish M. T.	Technical Assistant
15.	Mr. Thrusal A	Technical Assistant
16.	Mr. Anand Raj	Technical Assistant
17.	Mr. Aswin K	Technical Assistant
18.	Ms. Radhika U. K	Technical Assistant
19.	Ms. Akhila M	Technical Assistant
20.	Mr. Praveen M. N.	Technical Assistant
21.	Ms. Haritha M.	Technical Assistant
22.	Mr. Abhiraj A. R.	Technical Assistant
23.	Ms. Athulya Suresh	Technical Assistant





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