

Faculty of Engineering

Department of Civil Engineering

Centre for Geotechnical Facility and Services

The centre undertakes research and consultancy assignments in the area related to geotechnical investigations for highways; site investigations; ground improvement for soft and compressible soils; characterization and utilization of various kinds of waste and marginal materials in road construction.

The centre has successfully completed a large number of challenging projects being implemented by government departments like State PWD, Municipal Corporations, Town Panchayats and several Public and Private sector organizations. The centre also works on in-house R&D projects for a continuous development in the new areas of research. It has also contributed significantly in research projects in the area of geotechnical engineering. The centre is well equipped with conventional as well as advanced testing equipment's, instruments to undertake various kinds of laboratory and field studies in the area of geotechnical engineering related to soil analysis, site investigations and research projects. Moreover, it also offers various training and hands-on experience to the under graduate students of civil engineering in the above areas of specialization.

INFRASTRUCTURAL FACILITIES

1) Laboratory investigations

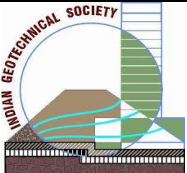
- Sieve analysis – Standard Sieves
- Hydrometer
- Liquid Limit device
- Plastic Limit set
- Shrinkage Limit set
- Proctor Compaction test apparatus
- Sand pouring test kit
- Field density test kit
- Core cutter test kid
- Vane shear test apparatus
- Direct shear test apparatus
- Unconfined compression test apparatus
- California bearing ratio test apparatus
- Standard penetration test apparatus

2) Field investigations

- Standard Penetration Test kit
- Drilling Rig Equipment
- Field Vane Shear Test
- Cone Penetrometer

AREAS OF R & D AND CONSULTANCY ACTIVITIES

Indian Geotechnical Society (IGS) - Student Chapter:

Name of the Chapter	Membership/ Code Number	Members
 Indian Geotechnical Society, Coimbatore	IGSCBESTCH018	Faculty: 10 Student: 66



Inauguration of “Indian Geotechnical Society (IGS) - Student Chapter” and Workshop on “Perception on Geotechnical Engineering” on 25-02-2020 and the Resource Person, Dr. P.D. Arumai Raj (Chairman, IGS Coimbatore Chapter) delivered an inaugural address

Significant achievements in Consultancy services:

- Detailed Geological and Geotechnical investigation in different parts of the Tamilnadu state and suggested suitable type of foundations with detailed investigation report.
- Provided techniques and guidelines for road works constructions.
- Contributed significantly on the assessment of site investigation and soil test (SPT) for different types of constructions in and around Coimbatore.
- Characterization of construction materials for foundation and road works.
- Road work inspections for Thirumalayampalayam, Madhukkarai, Othakkalmandapam, Shamalapuram, Morripalayam, Chettipalayam, Sulur and Vellaore Town Panchayat.
- Successfully completed the site investigation, soil exploration (SPT), bearing capacity calculation and design reports for Integrated Urban Development Mission (IUDM), National Bank for Agriculture and Rural Development (NABARD) and Tamil Nadu Urban Road Infrastructure Fund (TURIP) Scheme in Town Panchayats.
- Moreover, the centre has also involved in the investigation on strengthening of existing soil conditions, Laboratory test to determine the soil properties, Design and detailing of foundations, Slope stability analysis and Soil pollution studies.



Site investigation and Soil exploration works as part of the Consultancy works carried out through the “Centre for Geotechnical Facility and Services”

Best Practice Provided to Students through the Centre:

The Consultation and On-Site investigation are undertaken along with Students and Faculty members in the department of civil engineering. We educate, involve and train the students of civil engineering department in various activities organizes under the centre in order to give exposure on Site investigation, Soil exploration, Field and Laboratory testing of soil/ rock samples.

- Hands-on Training Practice
- Guest Lectures
- Field Visits

Beside the regular curriculum and academic activities, the department of civil engineering motivates the students to actively involved in the soil consultancy, laboratory investigation works.



Providing practical training in field testing (SPT) for soil investigation works and also evaluating the properties of soils in geotechnical engineering laboratory testing

Guest Lecture/ Value added course:



Organized - Value added course on Introduction to GIS:

Spatial data analysis through QGIS Software

QGIS functions as geographic information system (GIS) software, allowing users to analyze and edit spatial information, in addition to composing and exporting graphical maps. QGIS supports shapefiles, coverages, personal geodatabases, dxf, MapInfo, Post GIS, and other formats. Web services, including Web Map Service and Web Feature Service, are also supported to allow use of data from external sources.



Guest Lecture on “Ground Improvement Techniques” by the Chief Guest M. Samuel Thanaraj, Nehru Group of Institution, Coimbatore on Jan 24, 2020

- The centre has also organized a Guest Lecture on “Ground improvement Techniques”. The session was mainly focussed on the soil characterization, site investigation techniques and also varies remedial measures for improving the soft/ low strength soil in the field. The program coordinator of this guest lecture was Dr. M. Sumesh (Asst. Prof./ Civil/ KAHE).

Publication:

- SCOPUS indexed - Conference Proceedings was published as one of the outcomes from the project works carried under the centre.

Title of the paper: “Effect of Coal Ash on Strength Characteristics of Clayey Silt Soil Treated with Cement”

Authors: M. Sumesh, Baleshwar Singh, K. Vigneshwaran, C. Samsonchelladurai and G. Vikranth

Journal/ Proceedings: Material Today: Proceedings, Elsevier

Year of publication: 2020 & DOI: 10.1016/j.matpr.2020.10.247

Membership:

Indian Geotechnical Society (IGS) Membership:

Totally 10 Faculty members are elected as **Life Member** in **Indian Geotechnical Society (IGS)**.

Name of the Faculty	Designation	Membership ID
Dr. N. Balasundaram	Professor & HOD	CBE LM246
Dr. M. Natarajan	Professor	CBM LM236
Dr. G.R. Vijayshankar	Associate Professor	CBM LM237
Dr. M. Sumesh	Assistant Professor	LM 3665 [Elected in 2013]
Mrs. M. Vidhya	Assistant Professor	CBE LM 238
Mr. V. Johnpaul	Assistant Professor	CBE LM 239
Ms. R. Sindhu	Assistant Professor	CBE LM 242
Ms. P. Preethi	Assistant Professor	CBE LM 243
Ms. S. Solai Mathi	Assistant Professor	CBE LM 244
Mrs. S. Pratheba	Assistant Professor	CBE LM 245

Software Tools

- Geographical Information System (GIS) – software (QGIS)

Software package for geotechnical application is mainly used to teach students about how to access, process and analyze geospatial data using this open-source tools (QGIS). This training class/ short term course is beneficial for the students to understand the fundamental concepts of a geographic information systems.