

- Water and Environmental Research Centre (WERC)
- Geotechnical Engineering Research Centre (GERC)

Water and Environmental Research Centre (WERC)

About WERC

Water and Environment Research Centre (WERC) facilitates research in the major research areas of Hydraulic Engineering such as surface and groundwater quantity, modelling and simulation; Environmental Engineering such as water and wastewater quality analysis and treatment, solid waste management and air quality analysis and treatment; Weathering monitoring and analysis of the data. In addition, the centre caters the needs of consultancy and testing services in and around Tirupati. Based on the recommendations of the Water and Environmental Research Centre of Department of Civil Engineering, the Institution has sanctioned an amount of Rs. 20 lakhs for procurement of necessary equipment.

Vision

To become a center of excellence in research and consultancy on water and environment areas and providing solutions to the industry and societal issues.

Mission

- ❖ Provide suitable platform for conducting research on water, wastewater, solid waste, air and noise pollution, and weather monitoring and analysis of data
- ❖ Involve students and faculty members in research and outreach activities on the above said areas
- ❖ Carryout projects in the water and environment areas
- ❖ Provide consultancy services in the areas of Hydraulics and Environmental Engineering to the industries

Objectives

- ❖ To carry out research on quality of water, wastewater, solid waste, air and noise
- ❖ To offer consultancy services on availability of ground water and its quality, modelling and simulation

- ❖ To offer consultancy services for various industries on water and wastewater analysis; treatment of effluents, solid waste and air pollution.
- ❖ To carry out research on reusability and recycling studies on industrial wastewaters and solid wastes.
- ❖ To carry out research on renewable energy like biogas generation by using different biomasses and their combinations

Major Equipment

Sl. No.	Name of the Equipment
Existing Equipment	
1.	Double Ring Infiltrometer
2.	Water Level Indicator
3.	Weather Monitoring Station
4.	Visual Modflow Software
5.	Aquachem Software
6.	5 in 1 Multi Enviro-meter
7.	Ambient Fine Dust Sampler
8.	UV-Spectrophotometer
9.	Digital Weighing Balance
10.	BOD Incubator
11.	Muffle Furnace
12.	Hot Air Oven
13.	Jar Test Apparatus
14.	pH Meter
15.	Electrical Conductivity and TDS meter
16.	Turbidity Meter
17.	DO Meter
Proposed Equipment	
1.	Kjeldahl Nitrogen Apparatus

2.	COD Digester
3.	MPN Test Apparatus
4.	Atomic Absorption Spectrophotometer
5.	Biogas Analyser
6.	Air Compressor – 10 kg/sq.m.

Photographs



5 in 1 Multi Enviro-meter and Ambient Fine Dust Sampler



Double Ring Infiltrometer and Water Level Indicator



Weather Monitoring Station



Double Ring Infiltrometer, Water Level Indicator, 5 in 1 Multi Enviro-meter and Ambient Fine Dust Sampler

Geotechnical Engineering Research Centre (GERC)

About GERC

Geotechnical Engineering Research Centre (GTERC) facilitates research in the major research areas of geotechnical engineering such as expansive soils, reinforced earth, soil dynamics, environmental geotechniques, pavement geotechnics, foundation engineering and field investigation of soils to a reasonable extent. In addition, the centre will cater the needs of major consultancy and testing services in and around Tirupati. Based on the recommendations of the Geotechnical Engineering Research Group of Department of Civil Engineering, the Institution has sanctioned an amount of Rs. 20 lakhs.

Vision

To be the research centre of excellence in the field of Geotechnical Engineering in general and Ground Improvement and Foundation Engineering in particular.

Mission

- ❖ Create suitable environment for conducting research
- ❖ Inspire students to pursue research

- ❖ Conduct internationally acceptable quality research
- ❖ Write proposals for external funding and apply for patents
- ❖ Carryout industrial consultancy and testing services

Objectives

- ❖ To cater the needs of geotechnical engineering research in general and Ground Improvement and Foundation Engineering in particular
- ❖ To facilitate faculty and students to realize research in the field of geotechnical engineering
- ❖ To motivate faculty and students to contribute to research
- ❖ To create research atmosphere in the department
- ❖ To become the centre of excellence in the field of geotechnical engineering for research and consultancy

Major Equipment

Sl.No.	Name of the Equipment
Existing Equipment	
1.	Experimental Setup for Pullout Tests on Granular Pile Anchors
2.	Experimental Setup for Pullout Tests on Geosynthetic Reinforced Soil Slopes
3.	Triaxial Compression Testing Machine
4.	Pore Pressure Measurement Apparatus
5.	Sensitive Volume Change Measurement Apparatus
6.	Direct Shear Testing Machine
7.	Relative Density Test Apparatus
8.	Unconfined Compression Testing Machine
9.	Universal Automatic Compactor
10.	Consolidation Testing Machine
11.	California Bearing Ratio (CBR) Testing Machine

12.	Vane Shear Test Apparatus
Proposed Equipment	
1.	Swelling Pressure By Constant Volume Method Apparatus
2.	Digital Consolidation Apparatus (3 Gang)
3.	Lateral Pressure Assembly
4.	Compression Load Cell with Digital Indicator Unit
5.	Compression cum Tension Load Cell
6.	Hydraulic Extruder, Hand Operated
7.	Sampling Tubes – 38 mm Inner Diameter
8.	Sampling Tubes – 50 mm Inner Diameter
9.	LVDT – 100 mm
10.	LVDT – 50 mm
11.	LVDT – 25 mm
12.	Remotely Hand Operated Hydraulic Jack with Pumping Unit – 10 ton Capacity
13.	Remotely Hand Operated Hydraulic Jack with Pumping Unit – 200 ton Capacity
14.	DT 85G Series 3 – 8 channel Geotechnical Data Logger
15.	Vacuum Pump/De Airing System
16.	Portable Swelling Pressure and Heave Evaluating Apparatus (Digital)
17.	Desiccator
18.	Air Compressor – 10 kg/sq.m.
19.	Standard Penetration Test Apparatus
20.	Miscellaneous Equipment

Photographs



Experimental Setup for Pullout Tests on Granular Pile Anchors



Experimental Setup for Pullout Tests on Geosynthetic Reinforced Soil Slopes



Triaxial Compression Testing Machine with Pore Pressure Measurement