

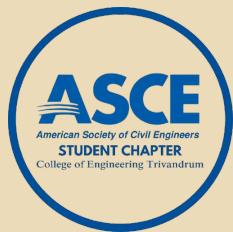


# ASCE INSIGHTS

## ASCE CET STUDENT CHAPTER

05/07/2025

### Monthly Newsletter



July Edition

#### HOD's Note

It is with immense pride and joy that I congratulate the ASCE CET Student Chapter on the launch of its first official newsletter. This marks a significant milestone in our journey of fostering professional growth, creativity, and collaboration among the budding civil engineers of CET.

This newsletter is more than just a compilation of events and achievements—it is a reflection of the passion, commitment, and innovative spirit that define our student community. It celebrates not only technical excellence but also the teamwork and initiative that drive our collective progress.

I encourage all students to actively contribute, engage, and take ownership of this platform. Let it be a space where ideas flourish, achievements are shared, and voices are heard. May this initiative grow into a lasting legacy that continually uplifts and inspires the civil engineering fraternity at CET.

Wishing the editorial team and all contributors great success in this and all future editions..

**Dr. Priyadarsini R S**

**Professor and Head**

**Department of Civil Engineering  
College of Engineering Trivandrum**

#### Advisor's Note

Delighted to see the first edition of the ASCE CET Student Chapter newsletter! It reflects our students' dedication and creativity. Congratulations to the team—wishing you continued success and many more inspiring editions!

Warm regards,

**Dr. Anusha S P**

**Faculty Advisor**

**ASCE CET Student Chapter**

#### President's Note

Proud to launch the first ASCE CET newsletter—celebrating our events, achievements, and vibrant civil engineering community. With 150+ members, we're growing strong. Thanks to all who made this possible—here's to more milestones ahead!

**SYAM-S**

**President,**

**ASCE CET Student Chapter**

## CET Thiruvananthapuram Marks 86 Years of Technical Education Excellence

CET, established on July 3, 1939, under Maharajah Sree Chithira Thirunal, has completed 86 years of excellence. From 21 students to 4,500+, it has grown into a top engineering institution. Known for its spanner-shaped building and green campus, CET drives innovation—ranging from ISRO nano-satellites to robotics patents. Alumni now lead national missions like Chandrayaan-3, showcasing its global impact.



#### Constructing Community: Our Journey So Far

#### An overview

The ASCE CET Student Chapter is a thriving community of over 300 civil engineering students at the College of Engineering Trivandrum, dedicated to learning, collaboration, and professional growth.

The chapter actively organizes a wide range of events including site visits, providing real-time exposure to construction and infrastructure projects; technical talks by industry experts; group discussions that promote critical thinking; and quizzes and competitions that test knowledge and encourage innovation.

Driven by a shared passion for civil engineering, ASCE CET continues to empower students to build not just structures, but a future rooted in knowledge, teamwork, and impact.

#### A Note of Thanks from the Editorial Desk

With great pride, we present the first edition of the ASCE CET newsletter. This milestone reflects the passion, teamwork, and dedication of our vibrant student community.

We sincerely thank our advisors, contributors, and every member of the ASCE CET family for their invaluable support in bringing this vision to life.

# ASCE India Student Symposium 2025

## Saintgits College Shines on National Stage

Held on March 28–29 at the Mukesh Patel School of Technology, the ASCE India Student Symposium showcased top talent in civil engineering.

Saintgits College of Engineering, Kottayam, emerged as the standout performer, winning 7 out of 8 events and earning the honor of representing India at the global ASCE Society event in the USA. Competitions ranged from technical poster making to innovative design challenges, encouraging creativity, technical expertise, and teamwork. The event highlighted the rising global impact of Indian engineering institutions.



## Invisible Engineering: Strength Without Reinforcement

Engineers from Princeton and Georgia Tech have developed a novel technique to strengthen structures by cloaking openings instead of reinforcing them. Inspired by how tree knots distribute stress, the method uses microstructures around holes to redirect forces—making the hole behave as if it doesn't exist. This “mechanical cloaking” adapts to various loads like tension and vibration, preserving structural integrity without added materials. With applications in aerospace, biomedical devices, and heritage conservation, this breakthrough could revolutionize how we design for durability.

## World's Tallest Bridge Nears Completion

The Huajiang Grand Canyon Bridge in Guizhou, China, is set to become the world's highest bridge, with its deck towering 625m above the Beipan River. Scheduled for completion in mid-2025, the bridge spans 2,890m with a 1,420m central suspension span and 93 steel truss segments weighing 22,000t.

Built using advanced cable cranes, it will slash travel time across the canyon from one hour to two minutes, linking Liuzhi and Anlong. The project aims to boost connectivity, local tourism, and economic growth, featuring attractions like a glass walkway, observation deck, and extreme sports facilities.

## Chenab Bridge: Bridging Distances

The world's tallest railway bridge, rising 359m above the Chenab River, connects Kashmir with the rest of India. Built to withstand earthquakes, strong winds, and extreme weather—it's a symbol of resilience and innovation. Spanning 1,315 meters, it ensures all-weather connectivity.



## Alumni Corner

“We shape our buildings; thereafter, they shape us.” — Winston Churchill

Civil engineers design, build, and maintain the foundation for our modern society. By applying their technical knowledge and expertise, civil engineers create safe and efficient structures that improve the quality of life for people around the globe. Working on initiatives that have a substantial impact is one of the most thrilling aspects of civil engineering. Imagine yourself gazing out at the highway you once designed, now unfolding across the land like a flowing silver thread. Every curve and intersection you designed set the rhythm of progress, shaping a pathway that flows with purpose, connects lives, and fuels the momentum of a growing future.

Your work as a civil engineer can leave a lasting legacy for generations to come.

\_Nandana (2025 Batch)

## IS CODE BOOKS

ALL CIVIL ENGINEERING IS CODE BOOKS AT ONE PLACE

## Engineering Essentials: Know Your Codes

IS Code of the Month: IS 456:2000  
Code of Practice for Plain and Reinforced Concrete

IS 456:2000 is the fundamental code for designing RCC and PCC structures in India. It outlines standards for materials, design methods, and construction practices, forming the basis of limit state design. Covering everything from cement and steel to curing and formwork, this code ensures structural safety, durability, and quality in concrete construction.

## EVENT HIGHLIGHTS

ASCE CET has had an engaging and impactful start to 2025, organizing various technical and interactive events to enrich student learning:

### Workshop: Managing Measures – Unlocking Careers in Quantity Surveying

Date: 01 June 2025 | Mode: Online

In collaboration with ENTRI App, this session by Jubair K V (Senior QS Lead, Qatar) introduced students to cost estimation, contract management, and career paths in quantity surveying. Over 100 participants attended this insightful workshop.



## UPCOMING EVENTS

### Internship Report Presentation

We are planning to conduct the competition on 09/07/2025 which provides interns an opportunity to present their internship projects, key learnings, and real-world insights to a panel of faculty, industry experts, and peers. It's a chance to shine, communicate effectively, and be recognized for their hard work.

## Turning Waste into Strength: A Sustainable Soil Solidifier from Japan

To reduce reliance on carbon-heavy cement, Prof. Shinya Inazumi's team developed a geopolymmer soil solidifier using industrial waste—Siding Cut Powder and recycled glass silica. It exceeds strength standards, cuts emissions, and solves arsenic leaching with calcium hydroxide.

Uses: Roads, disaster zones, rural builds, green projects.

This innovation turns waste into high-performance material—advancing sustainability and slashing cement-related CO<sub>2</sub> emissions.

## AI and X-Ray Tech Revolutionize Road Maintenance: ROVAI Project Sets New Benchmark

ROVAI, a new system combining X-ray CT and AI, enables real-time non-destructive road inspections. It detects micro-cracks, moisture, and wear before visible damage appears—cutting emergency repairs by 40% and improving maintenance planning by 60%. Tested in Germany and India, ROVAI supports smart city goals by reducing carbon emissions and unnecessary digging. Cities like Pune and Delhi are exploring its adoption for high-risk road zones.



## MOOC Courses: Learning Without Limits

NPTEL (National Programme on Technology Enhanced Learning) is an initiative by the Ministry of Education, Government of India, developed by IITs and IISc. It offers free online courses (MOOCs) in various disciplines, primarily focused on engineering, science, management, and humanities.

They are offered through SWAYAM platform. These courses are designed in a structured format that includes video lectures, weekly assignments, and an optional proctored final exam. The duration of the courses typically ranges from 4 to 12 weeks. Learners who wish to obtain a verified certificate can register for the final exam by paying a nominal fee of around ₹1000.



## Software-Spotlight: AutoCAD

Launched in 1982 by Autodesk, AutoCAD revolutionized design by bringing computer-aided drafting to personal computers. Once a basic 2D tool, it now supports advanced 2D and 3D modeling across engineering and architectural fields. Civil engineers use AutoCAD extensively for site plans, road layouts, drainage designs, and structural drawings. Features like layers, blocks, and automation via AutoLISP enhance efficiency. With free educational access and cloud collaboration support, AutoCAD remains a cornerstone of modern engineering design and education.

## A Stronger Shift to Steel by PWD

PWD has introduced steel structures at the Karamana Career Centre for faster and sustainable construction. Steel allows quicker assembly, reduced foundation load, and better flexibility than RCC. Though it needs protection from corrosion and fire, the shift marks a modern, efficient approach to building.



# The Longest Smart Road- Right in the city's heart

The Vellayambalam-Chenthitta smart road, spanning 3340m, is the longest of its kind and a model of modern urban infrastructure. It features anti-glare posts, smart octagonal LED lighting, underground power lines, and real-time digital traffic displays through Variable Message Sign boards. Feeder pillars enable automated lighting controls, such as dimming and fault detection, improving energy efficiency and maintenance. Tactile tiles along the footpath ensure accessibility for visually impaired pedestrians. With its blend of advanced technology, safety, and inclusive design, this smart road sets a new benchmark for urban development and offers a cleaner, more connected, and future-ready transport corridor.

## Innovate UK Recognizes Concretene for Carbon Reduction Breakthrough

In June 2025, Innovate UK recognized Concretene—a graphene-enhanced concrete developed by Nationwide Engineering and the University of Manchester—for its significant carbon reduction impact in construction. By using trace amounts of graphene, Concretene improves concrete strength and durability, reducing the need for cement and lowering embodied carbon by 20–30%. Since its first pilot in 2021, it has progressed through testing, gained investor backing, and entered practical use in projects like railway sleepers and precast slabs. Now production-ready with standardized processes, Concretene offers a scalable, sustainable solution for reducing emissions in the construction industry.

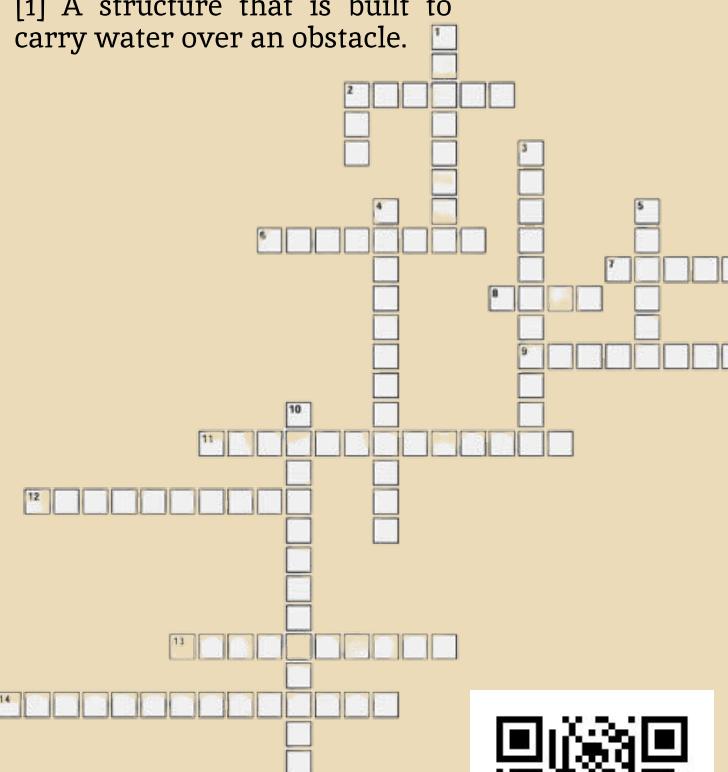


## GATE way to Success: Question of the Month

1. If a soil suffers a change in volume by the application of external loads but recovers its volume immediately after the load gets removed such soil is termed as?
2. The process of determining the plotted position of the station occupied by the plane table by mean suicides taken towards points of non location is called?
3. The gradient on a road is 1 in 20 the camber on the road is ?
4. BOD test is an indirect measure of
5. For a soil, the liquid limit is 70% and plastic limit is 30% as per IS soil classification, the soil is classified as?

### Down

- [2] The software [1] A structure that is built to used in creating a carry water over an obstacle. computer generated model.
- [3] The force that squeezes a material together.
- [4] The science of designing and constructing buildings and other structures.
- [5] A type of material used in construction that is made by mixing cement, sand, and water.
- [10] Steel bars or mesh added to concrete to increase its strength and durability.



### Across

- [2] This structural element is used to support vertical loads in buildings.
- [6] Road construction material that is made from a mixture of gravel, sand, and cement.
- [7] A type of construction material that is made from heated clay.
- [8] A structural member that is used to support weight, typically in a building or bridge.
- [9] A system that is used to collect and remove wastewater from buildings.
- [11] The measurement of the strength of a material.
- [12] The base upon which a structure is built; it distributes the load of the structure to the soil below.
- [13] A type of bridge that is supported by cables anchored at both ends.
- [14] A device used to measure the distance between two points

