



**Civil Engineering Association**



**CIVIL  
ENGINEERING  
ASSOCIATION  
FEST  
2023**



**March 31st - April 2nd**



**IIT Madras**



# ABOUT US

The Civil Engineering Association (CEA) was formed with the primary aim of exposing potential civil engineers to the challenges of the profession. With both students and faculty as its members, the organization is one of the most active Civil Engineering Associations in India.

CEA organizes activities like lectures by distinguished practitioners of the profession, video shows, competitions and socially relevant projects for the students throughout the year. The CEA activities of a year culminate in the CEA Fest. Civil Engineering Association Fest of IIT Madras is the largest student run civil engineering fest in India .

# RESILIENT INFRASTRUCTURE

An isometric illustration of a city skyline at night. The buildings are rendered in shades of purple and blue, with glowing windows and architectural details. A suspension bridge and a cable-stayed bridge are visible, along with a train on an elevated track. The scene is set against a dark purple background.

## THEME OF '23

The theme for this year is 'Resilient Infrastructure', which focuses on the design, construction and maintenance of structures and systems that can withstand and recover from natural disasters, climate change, and other unexpected events.

The goal is to raise awareness regarding infrastructure that is robust, adaptable, and able to function during and after any type of disruption. This theme highlights the importance of building infrastructure that can withstand the challenges of a changing world and ensure the safety and well-being of communities.

# OUR EVENTS

## Debate



### Debate

is an indispensable characteristic of an individual that makes him put forward his perspective in analyzing a situation of social cause whether be it in favor or against. It helps them to develop confidence within, makes them an extrovert. CEA provides an opportunity to the students to express their views on a given topic with professors as jury. The topics are from various disciplines of civil engineering to give them a feel.

This event tests their logical consistency, factual accuracy and spontaneity to answer the questions posed by opponents.

# OUR EVENTS

## ENCODE STEEL



Participants in the CEA fest at IITM will be required to design a structure that is made of reinforced concrete. This will involve designing the slabs, beams, columns, and steel reinforcements that are necessary to support the given load. The design process will require careful consideration of the structural requirements, including load-bearing capacity, stability, and durability. Designing the reinforced concrete slabs, beams, and columns will involve calculating the dimensions, reinforcing steel requirements, and other structural details. The design will also have to take into account the cost of materials, including the cost of the concrete, reinforcing steel, and any other materials that are needed.

Overall, the goal of the competition is to design a reinforced concrete structure that is structurally sound, cost-effective, and meets the requirements of the given load.

# OUR EVENTS

## MASTER BUILDER



Master Builder is an event in which participants will have to build a miniature model of a superstructure with given materials and constraints. The model is then tested for its axial load bearing capacity and load/weight ratio. Sometimes the model goes through vigorous load tests like earthquake simulation and high-speed wind test. The model that withstands these ultimate testing conditions at its best with given constraints is considered the winner.

# OUR EVENTS

## AQUANOMICS



Aquanomics is an event that brings together participants with expertise in hydraulic and water resources engineering to address an ecological issue. It is typically conducted over two days, with the first day dedicated to a software workshop for participants, and the second day focused on applying practical skills and software tools.

Overall, Aquanomics is an event that is designed to provide a platform for individuals to learn, grow, and showcase their knowledge and skills in solving real-world problems related to water resources. It is a great opportunity for professionals in the field of water resources engineering to enhance their knowledge and skills, network with other professionals, and showcase their talents

# OUR EVENTS

## BON AUTO ROUTIER



Bon - Auto Routier is a student event that challenges participants to think like transport designers and find efficient solutions for real-world traffic problems. The event aims to enhance students' planning abilities and provide a valuable learning experience. This event provides a platform for students to think like transport designers and come up with innovative and efficient solutions for existing traffic woes. Participants are challenged to analyze the current situation, identify the problems, and propose solutions that are both practical and sustainable.

Participating in Bon - Auto Routier is not only an opportunity to gain valuable experience and showcase one's talents, but also an opportunity to make a real impact on the community. The solutions proposed by the students have the potential to improve the lives of people by making transportation more efficient and sustainable.

# OUR EVENTS

## SUSTAINABLE CAMPUSES

## CAMPUS SUSTAINABILITY GRANTS

Sustainable Campuses is a new event where students from colleges across the country are invited to come up with innovative and sustainable measures that are being implemented on their campus. The event is being organized by CEA IIT Madras, and the winning college will be determined based on a framework developed by the institute.

This framework will take into account various factors such as energy conservation, waste management, and green transportation, among others. The event aims to encourage students to think creatively about how to make their campus more sustainable and environmentally friendly. We encourage only one entry from each college which represents the sustainable measures taken.

# OUR EVENTS

## GEO GENIUS



Geo Genius is a flagship event of the Geotechnical department of Civil Engineering, which is designed to showcase the application of geotechnical engineering principles to solve real-world problems. The event is a platform for students to showcase their creativity, innovative thinking, and problem-solving skills in the field of geotechnical engineering. One of the key tasks of the event is to construct an embankment using recycled materials. This task is not only challenging but also highly relevant to the current scenario, where case study event in which participants are given a real-life failure case, such as a bridge failure, dam failure, or residential building failure, is an excellent opportunity for participants to learn about the importance of proper design and construction in ensuring the safety and stability of structures. Participants would then be required to study the case and give a presentation explaining the reasons for the failure. This could involve analyzing the design and construction of the structure, identifying any potential weaknesses or areas where the structure may have been susceptible to failure, and discussing any lessons that can be learned from the failure. They also have to present their work to a panel of experts, which helps them to develop their communication and presentation skills.

# OUR EVENTS

## POTENTIAL PROFESSOR



**This event provides a platform for students to showcase the professor in them. The intention of this event is not to judge the knowledge of the students but rather to analyze their ability to transfer knowledge.**

**The topics provided will be of basic engineering level, participants will be provided time to prepare for the topics they select to teach. Professors will analyze their performance and decide the winner.**

# OUR EVENTS

## Case study



The Case Study focuses on enhancing the help they need to build the skills necessary to develop and launch innovative approaches to address the industry challenges.

We recognise the significance of learning that occurs outside of the formal classroom setting – learning that occurs within their cohort via institutional networks and through co-curricular experiences on the broader level

We focus on providing unique points of view and context for understanding global problems and developing solutions at scale while gaining real-world experience.

# OUR EVENTS

## CONCRETE CHALLENGE



In today's world, Concrete has become a very essential construction material and is used for constructing many famous skyscrapers, some of which include "Burj Khalifa" and "Petronas Twin Towers". In this event, participants are asked to prepare a concrete frame using ecofriendly reinforced concrete. Later, it is tested for its compressive strength and ultimate load capacity in flexure. The competition has always been offering participants a chance to explore and learn more of concrete technology making it one of the best events of CEA fest every year.

# OUR EVENTS

## QUIZ

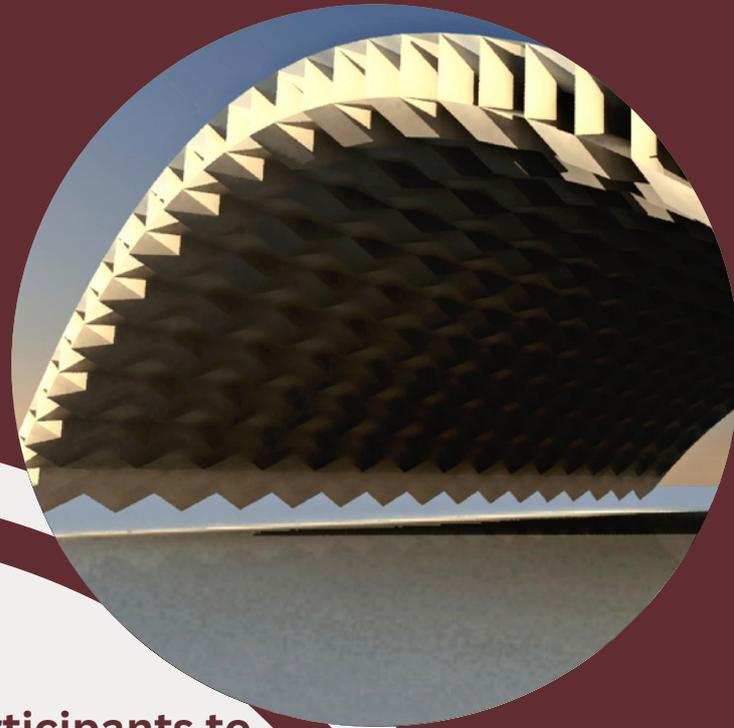


CEA Quiz tests the knowledge of participants in different civil engineering fields through unique rounds consisting of exciting questions. The questions will be asked from the various fields of civil engineering and its industrial applications.

Participants are required to unleash their intellectual skills to answer the challenging questions. CEA QUIZ encourages learning and understanding of civil engineering concepts in depth. The paradox in CEA is that it teaches you more than its tests you.

# OUR EVENTS

## CEA Modelling



CEA modeling requires the participants to create a three- dimensional structure with the materials provided within a given time. We are conducting this event for the first time with origami as the real world prototype. It is an interesting event which will be conducted by one of the best researcher award recipients, Professor Phani Sree Pradeep Pratapa.

You will be using the principles of Origami, the ancient art of paper folding, to design and build your structures. We believe that this will be an interesting and valuable learning experience for everyone involved. It will test your creativity, problem-solving skills, and ability to work under pressure.

# WORKSHOPS



CEA conducted workshops namely MATLAB, graphic designing during the academics for institute students. We introduced various workshops like STAAD. Pro, civil bridge design, primavera, GIS, BIM, 3D printing during CEA FEST 2020. They have been very successful at providing the participants, the hands on experience in various functional software's of civil engineering.

And this year we are introducing new workshops like how "Origami" can be used to make structures, and "Risk Assessment of Infrastructure Systems" etc.

# Our Websites

Register for the fest, events, workshops and accommodation here:

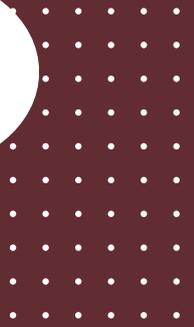
**[www.ceafest.com](http://www.ceafest.com)**

Register for our  
Campus Ambassador Program here:

**[ca.ceafest.com](http://ca.ceafest.com)**

Know more about us at:

**[civil.iitm.ac.in/cea/](http://civil.iitm.ac.in/cea/)**



# OUR REACH



**160+**  
Campus  
Ambassadors



**3100+**  
Registrations



**1000+**  
Followers



**1300+**  
Followers



**20800+**  
Views



**8500+**  
Likes

# CONTACT US

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## Civil Engineering Association

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