

SSN - ICE STUDENT INNOVATION CHALLENGE 2021

Theme: Infrastructure Reimagined

> Virtual competition with cash prizes worth 10,000 INR

> No registration fee

> Round 1 submission deadline:
16.02.2021, 23:59 hrs IST

Organised by Institution of Civil Engineers (ICE-UK) SSN Student Chapter,
Department of Civil Engineering, Sri Sivasubramaniya Nadar College of Engineering,
Chennai, India.

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Registration link: [CLICK HERE](#)

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The Students of the Department of Civil engineering at Sri Sivasubramaniya Nadar college of Engineering came together to induct a student chapter under the auspicious Institute of Civil Engineers(ICE - UK).

The aim of the student chapter is to promote the knowledge and understanding on what Civil Engineering is and to know the global trend.

Section 1 : Mission & Summary

India is emerging as one of the global hotspots for infrastructure creation, with the government, in the last few years, launching a wave of ambitious projects, spanning sectors ranging from transportation to energy, urban development, IT connectivity, and rural and agricultural amenities. This year's Economic Survey famously pegged India's funding requirement for infrastructure creation until 2040 at \$4.5 trillion, which is twice India's current GDP.

The traditional approaches to the creation of physical infrastructure, as well as the ways in which it is deployed, are being revisited. It has become clear that infrastructure assets will have to be sustainable, well aligned with the priorities and concerns of surrounding communities, the one that can constantly communicate with users, that is suited to the dynamic needs of various stakeholders, and which is capable of self-correction by learning from experience.

Institution of Civil Engineers (ICE-UK) SSN Student Chapter brings to you an exciting virtual competition with the theme 'Infrastructure Reimagined'. Participants will have to address infrastructure problems and identify innovative and feasible solutions which can cover various domains like automation, prefabrication, 3D printing, 5G, Internet of Things (IoT), Machine Learning (ML), Artificial Intelligence (AI), hybrid cloud and many more.

Participants will have to come up with solutions that can be called 'innovative', 'radical', 'unconventional' or 'out-of-the-box'. The solutions provided should be thoroughly researched, must not include any sort of plagiarism, carried out as a student effort with a feasible work plan and should be delivered with required deliverables.

Section 2 : Problem Statement – Infrastructure Reimagined

As a student chapter that fosters and encourages innovative thinking in engineering, we, at this competition, are looking for innovative solutions in infrastructure that prove to be futuristic, sustainable and efficient to make the system more responsive and resilient. The innovation can be in terms of use of new construction methods, automation, artificial intelligence, sustainable methodologies, rapid transformation of existing facilities and many more.

The competition focuses on :

1. Encouraging students to think innovatively and also transform their ideas into achievable solutions.
2. Providing students with a competitive environment that inculcates in them the attitude of taking feedback for improvement in the right way.

Section 3 : Ethics

This competition will follow high ethical standards. In this regard, any 'means of unfair competition', as stated below, will lead to immediate disqualification :

- Any means of plagiarism in the materials and ideas used in the competition
- Failure to provide credit for any sources referred to aid in the development of solutions
- Any false or malicious statements about other contestants, organizers of the competition, panel of judges or others involved in the competition

Section 4 : Eligibility

The following criteria must be adhered to :

- Individual participation or team participation is allowed with the team having not more than 4 members.
- Only one entry per participant or team is allowed.
- The teams shall be led by undergraduate students, and may be mentored by faculty and/or graduate students.
- We invite students from all nationalities & all backgrounds to join the challenge, whether you are working and studying in technical, art/design, or social science disciplines.
- Multi-disciplinary teams are encouraged and preferred; however, the innovation must focus on providing solutions to problems related to the Civil and Environmental Engineering (CEE) industry and the built environment.
- Deadlines should be strictly followed. No further entries will be accepted past the deadline

4.1. Levels of Competition

There are two levels to the competition

Level 1 : Video/ Presentation submission

Participants are required to address an infrastructure problem and come up with a solution that is innovative, practically feasible, sustainable and rapid. The video/presentation submission should be that of the participant explaining the problem and its innovative solution with any one of the tools (or a combination of tools) as per the participant's choice like presentation, poster, animation and so on.

Note : The solution in Level 1 should be in such a way that it can be extended to a design solution so as to qualify to Level 2 which will be a design round.

Level 2 : Design round

Participants will have to prepare a design/prototype for the solution provided in Level 1 and present it in the finals that will be held via virtual mode. The presentation should not exceed 5-10 minutes which will be followed by viva-voce by the panel of judges.

4.2. Required Conduct by the Participants

All participants are required to act in a professional and ethical manner throughout the competition. Failure to act as per code of conduct can result in disqualification at any stage of the competition.

Section 5 : Judging

The panel of judges for both the levels of the competition will involve highly qualified professionals and academicians who will judge the submissions by the participants strictly based on criteria as given in Section 6 : Scoring.

Participants are encouraged to bring in innovative ideas to present their proposed solution. Judging will be done only upon ensuring completeness of the presentation of the ideas. Judges and organizers of the competition will have all rights to disqualify any participant at any stage of the competition if found violating the code of conduct. Any and every decision by the judge panel will be final and must be adhered to by the participants.

Section 6 : Scoring

Being a professional and creative student chapter, this competition organized by ICE-UK SSN Student Chapter, would like to ensure that your ability to present an original and innovative infrastructure solution in a professional way plays a major role in the scoring part.

CRITERIA	LEVEL 1 : VIDEO SUBMISSION	LEVEL 2 : DESIGN ROUND
Innovation & Creativity	30%	25%
Relevance & Accuracy	25%	20%
Efficiency & Feasibility	20%	20%
Communication	20%	20%
Code of Conduct	5%	5%
Viva Voce	N/A	10%

6.1. Submission for Competition

Initial Submission: Upon registering for the competition, participants should prepare an initial submission for Level 1 and submit it before the deadline. Creating and submitting an initial submission is how student teams enter the competition and indicate that they are working on a project. The submission of the video/presentation for Level 1 shall be done as a Google drive link that is set to public mode (before the given deadline).

Final Submission: Teams whose Level 1 submissions are accepted should submit a presentation reflecting their complete design work for Level 2 before the deadline. The same presentation that was submitted should be presented on the day of the finals.

Deadlines should be strictly adhered to and no further entries will be accepted beyond them.

Please note that there is no sponsorship or reimbursement available for competition costs such as developing design prototypes.

6.2. Criteria

6.2.1. Innovation & Creativity

Higher scores will be given to entries that skip a generation of existing solutions and give out-of-the-box approaches to solve the problem.

6.2.2. Relevance & Accuracy

Submission of the solution should have reference to the theme of competition and should provide an innovative, efficient, sustainable and rapid solution to the problem. The submission will receive higher scores if it addresses big problems with large beneficiaries or cost and/or time savings in methodology and receive lower scores for just nice-to-have solutions.

6.2.3. Efficiency & Feasibility

The competition doesn't want the participant to just come up with an innovative solution but one that is technically and practically feasible.

Lower scoring will be given if the innovation does not appear to be a realistic success. Higher points will be given if the innovative solutions are cost effective and try to prove the same with a well-thought-out plan by considering market size, expenditure, socio-political and economic impact.

6.2.4. Communication

Communication plays a vital role to portray ideas and put them to action. A good submission should not only include a critically-thought, innovative and feasible solution but should also be effectively demonstrated and communicated.

6.2.5. Code of Conduct

Participants should follow proper code of conduct and maintain decorum at all stages of the competition. In case of any violation found, the organizers of the competition and the panel of judges will have all rights to disqualify the participant at the very moment.

6.2.6. Viva Voce

During the final round, participants will be asked technical questions by the panel of judges based on the solution provided and the presentation of the same.

Decision made by the panel of judges on the scores is final and should be adhered to by all the participants.

Section 7 : Prize Distribution

Top 3 winning teams from the final round will be awarded with a cash prize.

1st place : Rs. 5000

2nd place : Rs. 3000

3rd place : Rs. 2000

Section 8 : Important Dates

16 February 2021 (23:59 Hrs IST): Level 1 Submission Deadline

9 -18 February 2021 (23:59 Hrs IST): Acceptance Notification

Early submission results in early acceptance notification and thus the team will have more time to prepare for Level 2.

26 February 2021 (23:59 Hrs IST): Level 2 Submission Deadline

28 February 2021: Level 2 Final Round

Section 9 : Submission

All submissions should be made to icessnchapter@gmail.com

For further information contact *Team SSN-ICE* icessnchapter@gmail.com

