



SCIENCE AND TECHNOLOGY COUNCIL

TAKNEEK '18

ON THE SHOULDERS OF GIANTS



Unnat Bharat Abhiyan

Points: 20 + 20

Event type: Pool Event (Y18, Y17)

Event and Team Structure:

- Under this event, **two** problem statements are being floated.
- Each pool must send in two teams (one for each problem statement).
- Each team can consist of at most 4 members from Y17 and Y18 batch, with at least 2 members from Y18 batch.
- Please note that team members can overlap i.e. one person can participate in both problem statements.

Problem 1: Make the Drum Breathe

IITK is working on simplified composting wherein one achieves results with minimum efforts. As of now, the technique developed is being tried out in campus and in villages nearby. One problem being faced by the team is the one concerning 'aeration'. For composting, continuous airflow needs to reach the drum. The major challenges that can be pointed out are:

- Passive Aeration – no use of electrical/electronic devices
- Aeration throughout the drum – air needs to circulate even through the waste settled at the base of the drum
- The design needs to be extremely cost effective
- Dealing with 'moist waste' – a naïve design consisting of holes which will get blocked by the waste is not a good design

Problem 2: Grid the Farm!

In India, farmers adopt the 'broadcast method' to sow seeds. This is essentially scattering of the seeds randomly which leads to lower yield. Ideally, the farm should be divided into grids – the size of which depends on the crop being sown.

The problem statement requires the team to come up with a extremely cost effective design of an 'instrument' which can divide a farm (of a random shape and area) into grids (L*L squares where L ranges from 50cm to 250cm). Most weightage will be given to cost effectiveness and ease of use.



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Field Visit

Each pool needs to nominate 2 members (Y18 or Y17) – one of whom will work on Compost Drum Design and other on Grid the Farm! Both members cannot be working on the same problem. These nominations need to be sent to takneeksnt@gmail.com by 11:59 pm on 29th August 2018. (Only pool captains can send these nominations.)

These 2 members will get a chance to go on a field visit with the Unnat Bharat Abhiyan Team of IITK on the coming weekend. The field visit will give them a clearer picture of the problems faced by the farmers in India.

Rules and Regulations

- For each problem statement, the teams will have to prepare presentations describing their approach.
- The presentation will be of 10+5 minutes, where 5 minutes are for Q&A.
- The presentation will be judged by faculty members of IITK, working in the same area.

The presentations should ideally include the following sections:

- Description of the overall idea
- Design (not necessarily CAD)
- Cost analysis

The winner teams for each problem statement will get to join the UBA IITK team and implement their idea. The aim is to get your idea to testing phase and try them out in villages adopted by IITK. The teams who enter this phase will be working under constant mentorship of faculty members.

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