SNTC
IIT Mandi

XPECTO

Galactic Eye

Description:

Astronomical observation needs both public and private functions: Stargazing & night sky can give a new public function & value to the fortress appealing the highest number of visitors. Building an observatory that is accessible to all, would increase the interest of the commons in the field of astronomy and astrophysics. Because of this, the observatory would include multiple features to make it easier for the public to stargaze and learn astronomy and astrophysics by making things completely autonomous, a common lounge, books, discussion rooms, computers for better visualization of multiple things etc.

Team Structure:

- A team should have at least 3 and at most 6 team members.

Timeline:

- The problem statement will be released on 10th May 2022.
- The participants will have to submit their final submission on 14th May 2022.
- There will be a final presentation on 16th May 2022.

Judging Criteria:

Final Evaluation 300:

The final submission of the teams would be evaluated on the following basis:

1. Innovation and feasibility in design: 100
2. Materials, optical analysis and telescope specifications: 40
3. Accessibility, Star Map: 20

4. Basic automation Idea for the telescope: 40
5. Real time performance analysis: 40
6. Code Complexity: 60

Presentation and Q&A: 100

1. Presentation: 50
2. Q&A: 50

Rules and Regulations:

1. A brief topographical analysis should be done before designing the observatory based on the location where the observatory would be located.
2. Terrain information for observatory location would be provided.
3. Plagiarism upto 10% is tolerable. 10-30% plagiarism will fetch a penalty of 20% of points obtained. Above that would result in disqualification of the team.
4. Max Team Size - 6 Members
5. Only team leaders will have to register and would be the point of contact for the rest of the event.
6. Each team would be provided with a unique ID and all the submissions should be named using it. College names should not be present in any of the submissions. If found it would fetch a penalty of 30 points.
7. A description of the components used and justification of the particular component should be provided.
8. The limit of pages for the report and slides should not be exceeded. In case done so it would attract a penalty of 30 points.

Submission

FINAL-EVALUATION (300 Points)- To be submitted **before 1 day of final presentation**

Following files are to be submitted in report:

1. CAD Model - It should be an STL file.
2. Design Report - It should contain all the specifications and description of the design. The materials for the observatory, topographical information should also be included. Design Specifications of the

telescope along with proper optical calculations for the lenses and mirrors being used in the telescope should be present. Everything in design should have a proper reasoning behind it. The design report should be of max 7 pages.

3. Detailed pseudo code or algorithm should be given which explains autonomous working of the telescope. Any libraries or APIs should be clearly mentioned.

FINAL PRESENTATION (100 Points)

Following files need to be provided for final submission:
PPT - Should include design highlights and all the various analysis, Innovation, ease of use should also be included.
Should not exceed 10 Slides.

The time limit for presentation is 5mins, which will be followed by a Q&A session by the judges. The Q&A session would be 5mins long.

Event Coordinators:

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