We are so thrilled to share that our Proposal has been accepted by the National Aeronautics and Space Administration (NASA) for the Human Exploration Rover Challenge 2023! The primary objective of HERC is that teams of students are required to design, ideate, fabricate, and rigorously test human-powered rovers capable of traversing challenging terrain and a task tool for the completion of various mission tasks, as mentioned in the handbook.

The team had a stringent deadline and went through several sleepless nights. We're glad to secure a spot amongst the selected proposals on the very first attempt. It has always been a dream of many students to work at NASA and contribute to humanity.

Mr. Aakash Sinha assisted the team as our team advisor. He is a professor who has much experience working with robotics and has worked with NASA projects in the past.

The students were also assisted by Mrs. Vinnie Mathur, who was instrumental in helping the team get the resources required to make the presentation a success. We are highly grateful for the university's resources and support and look forward to making the Shiv Nadar IoE flag soar high in international lands.

We aim to build and develop a rover that can be used for completing various tasks with all possible challenges in cooperating with different technologies and tools needed to succeed. We will try to ensure that our rover works efficiently, is cost-effective, and fulfills its purpose.

There are different ways by which we will keep our team motivated. First, we will make the plan and goal clear in our minds and keep reminding ourselves of the purpose of winning the competition throughout the work. Focusing on the destination and keeping it clear will do the job in less time with better results. This itself will be a motivating force for the team members to work more. We will make sure that we talk more positively about the project to keep our team members feeling that the target is achievable. We will also ensure that we keep taking regular reviews from the members to ensure their work and keep them interested. One of the most important factors to keep the team composition motivated is praising the team members for every victory we achieve. We will make sure that we do so.

To begin, we will seek assistance from our professors and conduct extensive research to ensure that we use our rover's best materials and technology. Furthermore, to give our all, we will ensure that every student on our team attends lab sessions and becomes acquainted with machines. While building the rover, we will thoroughly inspect every component and obtain spare parts, so we do not encounter any problems. We also reviewed previous years' videos and rover designs to see what challenges they faced and how we could overcome them. We will test the rover as much as possible after it is completed so that we can modify it and overcome the difficulties we encounter. We will do our best to ensure that our rover has no problems and operates at maximum efficiency. We will use high-quality materials because we are going on an international platform. We will use high-quality steel for the chassis because it is the essential component of the rover. Aside from that, we will use the best breaks and suspension to increase the rover's efficiency. We're also employing gears to make driving our rover easier. We'll try to get custom tires made to our specifications. We will research and select the best material to create a long-lasting and efficient rover.

Our rover is a specialized 4wd system crafted to withstand rough extra-terrestrial terrains. Every inch of the design hides a lot of research and detailed ideation.

Roughly, the chassis is fabricated from metal rods to keep it lightweight and rugged. The steering is to have an altogether different kind of steering which is well set for such adverse terrains. The chassis is planned to house decent shock absorbers to smoothen the bumps and cracks, along with the unique single-axis rotatable design that lets all wheels be at different angles and highs while still achieving equilibrium. The braking system is made such that apart from manually applying brakes, there would also be a provision for hill-hold capabilities once pedalling is stopped. Lastly, the pedalling is done via the generic foot pedals as in cycles. The difference is that we plan to use customizable gearboxes to fit our needs well and to give more work for the pedalling.

With all such innovative design concepts and vivid design visualizations, we believe we're all set towards making a rover that isn't just there to compete but also to rise and shine amongst the rest.