

Government College of Engineering
Station road, Osmanpura, Aurangabad-431005
(An Autonomous Institute of Government of Maharashtra)



TEAM ARYANS

Striving for Excellence

ANNUAL REPORT
OF
TEAM ARYANS
2020 – 2021



Date: 1st May, 2021

For the past nine years, **Team Aryans Racing**, a team of students of different disciplines from Government College of Engineering, Aurangabad has participated in the SAE Baja design challenge. The team competes against top engineering students across India and the world. The goal of this competition is to apply technical engineering skills to a hands-on project by designing and building an off-road racing vehicle. Baja is an intercollegiate design competition run by the Society of Automotive Engineers (SAE). Teams of students from colleges all over India design and build small off-road racing vehicles and compete against each other at annual conferences. By simulating real-world design scenarios, students learn the necessary skills that will help them become successful engineers and successful professionals.

The season 2020-21 started in the month March 2020. Students from our institute formed a team and started the work to build the best all-terrain vehicle. The aim of the team this year was to be the national champions. We set the goal in the early stages of the competition and kept the workflow accordingly to achieve the milestone. But countrywide lockdown forced us to stop our activities in mid-march only. The conditions were not previously experienced by the team and so it was difficult to work virtually and remotely. Even in these prevailing situations, we continued the vehicle design work remotely via digital channels for meetings and discussions.

Uncontrollable COVID outbreak in the month of May affected the layout of BAJA SAE competition for this year. The competition changed its face to complete virtual type consisting static presentations and virtual dynamic events. The competition was divided into two stages. In first stage, the team had to present the design presentation virtually and attempt a quiz round which was based on vehicle dynamics. The second stage included virtual presentations and dynamic simulation round. Dynamic simulation round was the new challenge for the team as we had to learn a Germany based simulation software named IPG Carmaker and simulate and tune our vehicle within that in short period of time. Addition to this, teams were challenged by BAJA to design a 4WD/AWD vehicle and we accepted that challenge. We have designed an 4WD vehicle for 1st time in history of the Team.

Team conducted daily meetings on online platform to interact with the other team members and to get the overview of all the tasks throughout the season. As we approached the event dates, we practiced the presentation on virtual platforms like zoom to get used to with these platforms and avoid any problems during the competition time. We learned and simulated our vehicle for dynamic scenarios in the IPG Carmaker software within short time.

The second phase of the competition was conducted between 21st to 25th April, 2021. Team has successfully completed all the final presentations and virtual dynamic events as per the provided slots. The season wrapped up with a great success grabbing below awards in the competition:

Overall	AIR 3rd
Manufacturing Award	AIR 1st
Best Brake Performance Award	AIR 1st
Maneuverability Event	AIR 2nd
Overall Dynamic Award	AIR 3rd
BAJA Phase 1	AIR 6th

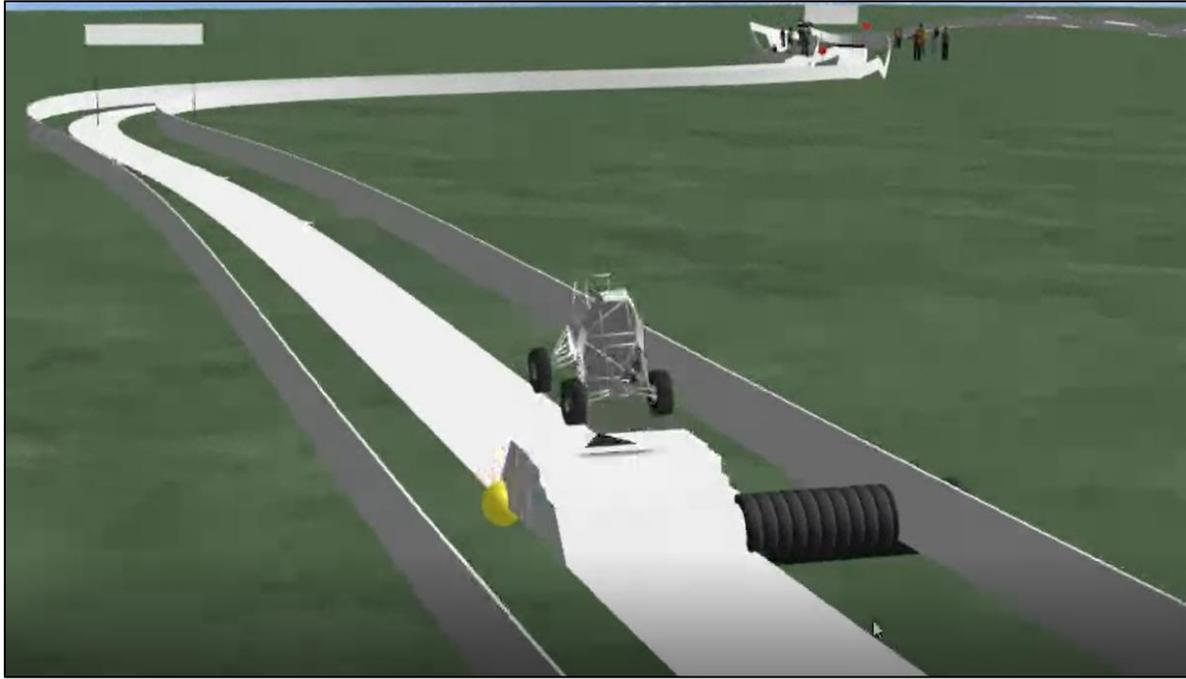
This journey wouldn't been a success without the precious support of college, faculty, parents and continuous support of alumni and their guidance. We would like to give our sincere thanks to Dr. A. M. Nikalje Sir, Faculty Advisor (BAJA 2020-2021), Dr. S. B. Chikalthankar sir, Head, Mechanical Engineering Department, Dr. S. R. Hirekhan Sir, Head, Electronics and Telecommunication Department for their valuable guidance. We would also like to thanks Dr. U. J. Kahalekar Sir, Dean Students activities and Principal of institute, Dr. P. B. Murnal sir for their valuable cooperation.

Team Members 2020 – 2021:

Pradeep Madane (Team Captain), Pushpraj Dongare (Team Vice-Captain), Amruta Yadav (Team Manager), Kaivalya Pande, Prajwal Gote, Tushar Khodankar, Atharva Bagad, Saurabh Singare, Parth Brahmapurkar, Amit Sonwane, Akram Syed, Mahesh Gadalkar, Chaitanya Bhagat, Sarthak Joshi, Sakshi Tungikar, Yashwant Mali, Pankaj Chaudhari, Ram Shingane.



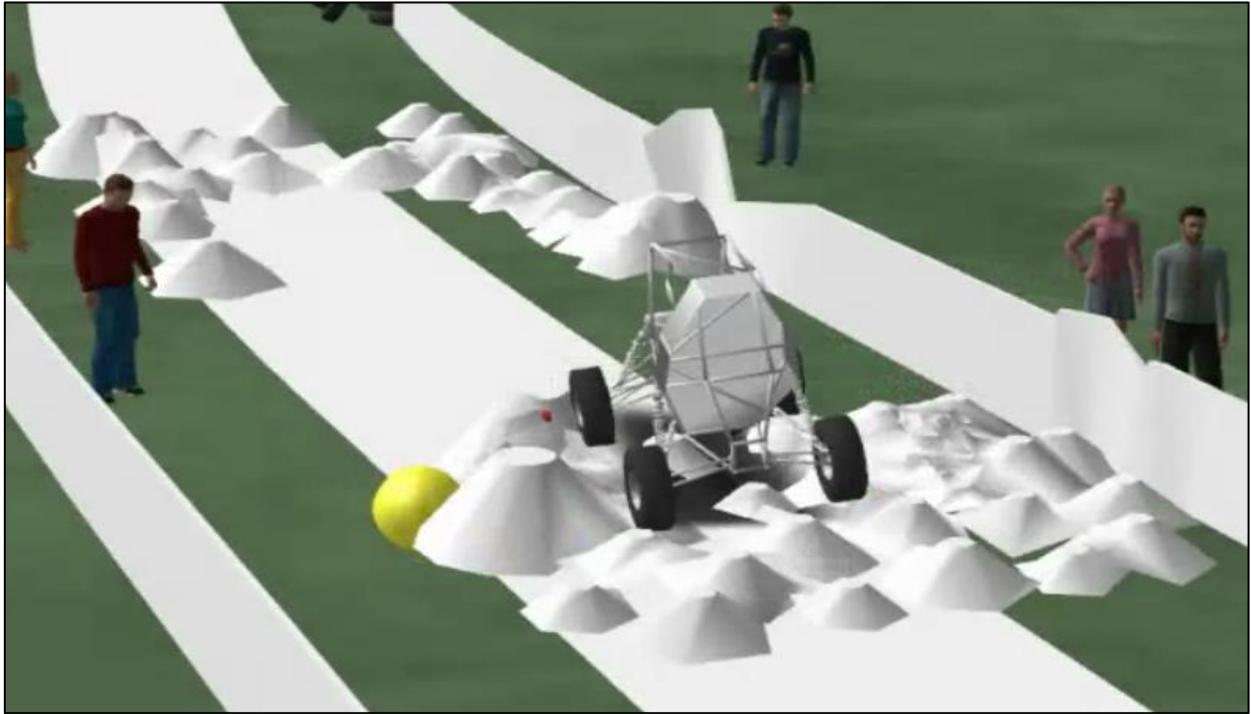
Vulcan 2.0 Prototype equipped with 4WD capabilities



Dynamic Simulation in IPG Carmaker – 1.3m high jump



Dynamic Simulation in IPG Carmaker – Stiff Jump while turning



Dynamic Simulation in IPG Carmaker – Rock Crawl