



Late Shri. Vishnu Waman Thakur Charitable Trust's

## VIVA Institute of Technology

Approved by AICTE, New Delhi, DTE, Government of Maharashtra, Affiliated to University of Mumbai  
At- Shirgaon, Post-Virar (E.), Tal-Vasai, Dist-Palghar – 401 305.

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<b>Event Name:</b>	SAE Aero Design, SOUTHERN Section
<b>Location:</b>	CHENNAI, India
<b>Participating Team Name:</b>	TEAM ARSYA
<b>TEAM No:</b>	ADC20190246/47
<b>Date:</b>	18 <sup>th</sup> and 19th JULY,2020
<b>Time:</b>	10.00 Onwards

### Department of Mechanical Engineering

#### Programme Summary/Details:

Team ARSYA, representing VIVA Institute of Technology, proudly participated in the prestigious SAE Aero Design 2019 event held in Chennai, India. The team competed in the 2 Class category, micro and regular class presenting 3 aero models, 2 of micro class and 1 of Regular class. The registration for this esteemed event was successfully completed on Tuesday, October 22, 2019.

After completion of the registration process the members of Team ArsyA embarked on the design phase of our RC aircraft project. This phase commenced with careful adherence to the instructions outlined in the SAE Aero Design rule book, which was provided to us in late January 2020. To ensure compliance with all the requirements and guidelines specified by the SAE Aero Design team, our members diligently utilized software tools such as SolidWorks for 3D design and ANSYS for simulation purposes.

The entire team worked dedicatedly on analysing the competition requirement for both the categories and iterating various possible design models. After preparing CAD models of various ideas and on analysing and comparing them the best fit was selected for the manufacturing phase of our RC aircraft project.

Market research was conducted to gather the best components and materials required for manufacturing. The manufacturing process began in the 3rd week of February 2020, marking an important milestone in our project timeline. Managing time was a very tedious task since models were to be prepared for both the categories and so the task was distributed by making 2 dedicated teams, one for micro and one for regular class. To ensure the highest level of precision and quality, our team followed industry-standard manufacturing practices and utilized advanced manufacturing techniques. We employed a range of specialized tools and machinery to fabricate the different components of the aircraft, adhering closely to the specifications outlined in the design.

We utilized cutting-edge manufacturing technologies and techniques to ensure accuracy and efficiency in each step. To ensure the integrity and reliability of the final product, strict quality control was performed. Initially 3 small wooden prototypes were prepared (1 regular and 2 micro) to avoid any errors in final model. After meticulous manufacturing and assembly, our aircraft was completed by the end of May. The regular class model was named 'KHURAMI', and the 2 micro models were named 'GARUDA' and 'Flash'.

Rigorous testing was carried out to check whether every component and all systems were functioning properly. We were eager to witness the culmination of our efforts in the first flight test.



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On 26<sup>th</sup> May 20, at the prestigious Mahalakshmi Race Course, Team Arsyia conducted the highly anticipated inaugural flight test for all the 3 models. The flight test was conducted under the expert supervision of experienced pilot Tushar Pethe, whose expertise and guidance were invaluable to the success of the test.

With great excitement and anticipation, we witnessed the aircraft gracefully take off for its first flight. It was a moment of immense pride and satisfaction for the entire team as we observed our hard work and dedication come to fruition. The successful flight test marked a significant milestone in our journey towards participating in the SAE Aero Design 2019 Southern section event.

After the successful completion of the flight test, the team promptly compiled and submitted the comprehensive design report to the relevant authorities on June, 2020. The entire team set off for the competition on 16<sup>th</sup> July and reached the venue (SRM University, Chennai) on 17<sup>th</sup>. The completion began on 18<sup>th</sup> July and ended on 19<sup>th</sup> July 2020. Team Arsyia's planes were the one which carried the highest payload among more than 25 teams at the event, SAE Aero Modelling 2019, held in Chennai, India.

The team expressed their gratitude to the management of VIVA Institute of Technology, the principal, and Mrs. Niyati Raut for their support and motivation. They also thanked their sponsors for their generous support and guidance, which played a vital role in their success.

In conclusion, Team ARSYIA participation in SAE Aero design 2019 was filled with challenges and accomplishments.

### Photos:







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