

“The challenge of turning failure into growth continues” GIST, the 11-year challenge of the 'Infinite Challenge Project'... Beyond 1km-class rockets, aiming for a 10km altitude

- Creative projects planned and developed directly by students... Seeking solutions by sharing trial and error with a faculty mentoring team

- Student-led growth cases draw attention, such as the 'Lift-Off' team challenging hybrid engines beyond solid-fuel rockets



▲ Attendees are taking a group photo at the ‘Infinite Challenge Project 11th Mentoring Day,’ held on Tuesday, August 4. (From the fifth person from the left in the first row) Professor Eunsung Song (Department of AI), Professor Huijeong Hwang (Department of Environment and Energy Engineering), Professor Hisam Kim (Evaluation Committee Chairperson) (School of Humanities and Social Sciences), Professor Pilwon Hur (Department of Mechanical and Robotics Engineering), and Professor Dongseok Kwon (Department of Semiconductor Engineering).

The Gwangju Institute of Science and Technology (GIST, President Kichul Lim) announced that it held the ‘Infinite Challenge Project Mentoring Day’ on Tuesday, August 4, at College Building-A for the participating teams of the 11th cohort of the ‘Infinite Challenge Project,’ a student-led creative activity support program.

This Mentoring Day went beyond merely reviewing the interim results of the projects; it involved sharing the trial and error and changes in plans experienced by the students during the execution process, and together they explored directions to

advance the projects to the next level.

The Infinite Challenge Project is GIST's representative extracurricular education program that has been operating since 2016 with the goal of fostering '3C1P talents,' who are convergent talents equipped with Creativity, Cooperation, Communication, and Problem-solving skills.

It is characterized by supporting students in developing creative problem-solving capabilities by enabling them to define problems and design solutions on their own, rather than seeking predetermined answers, and by repeating the process of challenge, failure, and improvement.

A total of 19 teams participated in the 11th cohort this year. GIST undergraduate students, organized into teams of at least two and no more than six members, are moving away from activities focused on GPA or job preparation to freely plan and execute projects in three fields: creative project production, 3C1P competency enhancement, and designated competitions.

Starting with the launch ceremony held on May 28 (Thu), the teams will carry out their projects for approximately seven months. Through mid-term mentoring and a final performance presentation, they share not only the results but also the growth experienced during the project execution process.

The mentoring session on this day was attended by a team of mentors consisting of Professor Hisam Kim of the School of Humanities and Social Sciences, who served as the evaluation committee chair, as well as Professor Pilwon Hur of the School of Mechanical and Robotics Engineering, Professor Eunsung Song of the School of AI, Professor Huijeong Hwang of the Department of Environment and Energy Engineering, and Professor Dongseok Kwon of the School of Semiconductor Engineering.

The mentoring team provided customized advice to each team, focusing not only on technical completeness but also on the project's purpose and feasibility, problem-solving methods during implementation, and future development directions. In particular, the mentoring was conducted through questioning and discussion from various perspectives to help students connect trial and error with new ideas and improvements.

The "Infinite Challenge" project is a program that places significance on the learning gained during the challenge process rather than the results. It views failure and trial and error as important processes for project development and supports students in

growing by solving problems independently based on these experiences.

In fact, during this Mentoring Day, some teams presented details that had been newly developed and refined during the execution of the plans they had presented at the launch ceremony, demonstrating how student-led projects have grown significantly through trial and error. Cases of challenging higher-level goals based on last year's experience also drew attention.

The 'LIFTOFF' team, which has participated in the Infinite Challenge project for two consecutive years, succeeded in developing the solid-fuel-based rocket 'QUASAR-1' last year. This year, they are challenging themselves to develop and launch 'QUASAR-2,' based on a hybrid rocket engine with significantly enhanced performance.

QUASAR-1 was developed as a rocket with a weight of approximately 30 kg excluding fuel and a target altitude of 1 km. QUASAR-2, however, utilizes a hybrid engine combining solid fuel and liquid oxidizer, aiming to achieve a weight of approximately 70 kg excluding fuel and a target altitude of 10 km.

In particular, Quasar-2 aims to reach an altitude of 10 km—near the stratosphere where international flights operate—and will carry a scaled-down satellite model developed by "Starlight," another team participating in the Infinite Challenge project. Through this, the team plans to attempt to verify aerospace technologies, such as measuring communication distances in high-altitude environments.



▲ *The "Starlight" team explains the technical principles of the scaled-down satellite model they are developing in-house at the "Infinite Challenge Project 11th Mentoring Day."*

If the launch of Quasar-2 is successful, it is expected to become the largest rocket developed by domestic undergraduate students in terms of scale and flight performance.

Team Leader Ji-hong Lee (sophomore, Department of Mechanical and Robotics Engineering) stated, "The trial and error experienced during the ignition process last year served as a foundation for implementing more stable ignition technology this year," adding, "Based on the advice received at this Mentoring Day, we will work to complete the project with the goal of launching this coming November."

In response, Professor Pilwon Hur (Department of Mechanical and Robotics Engineering) advised that the project needs to be pursued with full consideration of not only technical improvements during the design process but also potential schedule delays and trial-and-error that may occur during the collaboration process.

Professor Hisam Kim (Department of Humanities and Social Sciences), the evaluation committee chair for the 11th Infinite Challenge Project, stated, "The Infinite Challenge Project Mentoring Day is a gathering where teams collectively deliberate on the difficulties they faced while carrying out the project and ways to resolve them." He added, "I hope students will use various trials and errors as opportunities for learning and growth, and experience the process of developing the project into a better outcome."

He continued, "In the era of artificial intelligence (AI), the ability to ask new questions and imagine freely is becoming increasingly important, and in a rapidly changing society, resilience—the ability to continue facing challenges, failures, and re-challenges—is also necessary." He further expressed his hope that "through this project, the experience of students challenging themselves without fear of failure, and communicating and collaborating with team members, will become a valuable asset for their future growth."

Professor Pilwon Hur advised that it is necessary to proceed with the project while fully taking on challenges. Meanwhile, the participating teams will continue their activities by refining their projects based on the advice of the mentor group provided today, and plan to share their final results at the performance presentation in December.

GIST plans to continue operating student-led extracurricular education programs to help students cultivate creativity, collaboration skills, and problem-solving capabilities through a process of repeated challenges, failures, and improvements.