



■ URC 2024 ■

# UIU chasing big dreams at this year's URC with **YGGDRASIL**

**CAMPUS DESK**

The Mars rover team from United International University (UIU) is a collaborative effort among several students from various disciplines united by their shared passion for space exploration under UIU's Center for Artificial Intelligence and Robotics (CAIR) lab. Heading the CAIR is Dr Salekul Islam, a professor at the Department of Computer Science and Engineering (CSE), UIU, and leading the team is Abid Hossain, a lecturer at the same department, who serves as the team mentor. Md Yasin, a student from UIU's CSE department is the team leader.

The team is structured into seven specialised sub-teams. These include the mechanical sub-team led by Bayzid Baytur Redwan; electrical sub-team led by Shah Mehrab Hossain; science sub-team led by Suraia Afroz Maria; software and autonomous sub-team led by Sheikh Sakib; communications sub-team led by Shorower Hossain; logistics team led by Md Yasin, and media and branding team led by Sakib Mahmood Saad.

Formed in 2021, the team has grown to encompass 40 dedicated members recruited annually. Their achievements speak volumes, with consecutive triumphs in the University Rover Challenge (URC) 2022 and 2023, as well as the Anatolian Rover Challenge 2022.

With that being said, the team is always looking to improve and aim bigger, and this year will be no different as they prepare for the URC finals with their Yggdrasil rover.

"We are using our past experiences at the URC to improve our rover," says Abid. "Learning from the previous challenges we faced at the competition, we have brought changes to many aspects of our team and the rover itself, so I am hopeful that we'll be putting on a better performance this year."

Dr Salekul adds to this saying, "This year's rover is a more improved version of the last one. We have made improvements in different areas such as the communication and operation systems. We have also had to improvise a lot. For instance, we have used carbon fibre in our rover this year, but unfortunately, we couldn't find any advanced technology in use in Bangladesh to cut the carbon fibre sheets. So, the team had to work with local furniture-making stores to get that done."

"Right now, we're using different manufacturing techniques, hardware, and software packages to make sure that our rover is of the same standard as other top teams from different international universities participating in the URC," Abid adds.

Of course, when working on a project like this, roadblocks can pop up in many forms.

"Compared to teams from the US and Europe, we face far more challenges, especially in terms of logistics and staying fit after the long journey to the US," says Dr Salekul. "Besides, there's a lot of on-field decisions we have to take at the competition which can impact our score. We even see some of the best-performing teams struggle with problems that tend to hamper their performance. Despite that, we have left no stone unturned in our preparations for this year's competition."

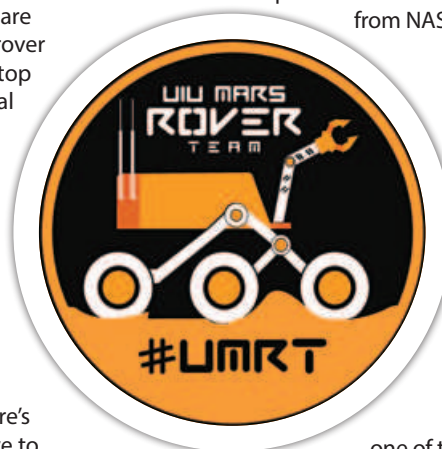
Abid goes on to emphasise on the need for certain skills for working on a project of this scale saying, "Building such a rover requires a team to have mechanical expertise, but UIU doesn't have a dedicated Mechanical department. Hence, our team members had

to learn a lot of things from scratch by themselves."

"Team-wide collaboration is vital here," adds Dr Salekul. "Just having students from Mechanical, Electrical, or Computer Science backgrounds won't suffice. They need to be able to work together to succeed."

Despite the roadblocks and challenges, UIU isn't afraid to chase bigger dreams at this year's URC, and the team's past accomplishments are inspiring them to do their best.

"In 2022, our rover's science system received a lot of praise at the competition," says Abid. "There, scientists from NASA told us that they were currently using



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one of the technologies in their missions which we had used in our rover. This is indeed a matter of pride for us that we were able to implement something that NASA too is using."

As for what we can expect from Yggdrasil and UIU's Mars rover team, Abid says "We have done our best so far and will continue doing so at the competition as well as represent our institution and our country."

"Are we nervous? I'd say no," adds Abid. "We're trying out many new things this year, so we're more excited than nervous."