

# Tec students ranked in global top 7 at 2024 NASA Rover Challenge



IKTAN Roving, a team made up of 34 undergraduate students at [Tecnológico de Monterrey's Cuernavaca campus](#), were ranked in seventh place overall at the [2024 NASA Human Exploration Rover Challenge](#) (HERC).

From April 18 to 20, the **students** competed against 72 other **finalist teams** selected by NASA from more than **15 countries**, including the United States, Canada, Brazil, Turkey, and India.

The **30th NASA engineering competition** took place at the [U.S. Space & Rocket Center](#) in Huntsville, Alabama, **United States**.

IKTAN Roving scored **122 points** on their **first day** of participation and **137** on the **second day** of the **competition**, in which they **designed, built, and tested** their **rover** in a half-mile long **obstacle course**.

[https://www.instagram.com/p/C531Ba4OzQV/?hl=es&img\\_index=1](https://www.instagram.com/p/C531Ba4OzQV/?hl=es&img_index=1)  
**Heading to NASA HERC**

The **Cuernavaca campus** has **participated** in the **HERC competition** for **12 consecutive years**, dedicating months of work to the **design and manufacture** of the rover, **marketing** it on social networks, and **explaining science and technology** through STEM activities.

Prior to the competition, the team **shared** their **progress** through two virtual **presentations** to the **judges** entitled “*Design Review Presentation*” and “*Operational Readiness Review Presentation*.”

**“The team became a family, and it really puts all of us to the test.” - Daniela Espinosa**

**“The *team* has become a *family*; we can be *working* in the *laboratory* into the evening, and we *celebrate* when *things* are *achieved*. It really puts *all of us to the test*,”** said Daniela Espinosa, IKTAN team leader and engineering student.

The **presentations** took place in **September 2023** and **March 2024**. The first focused on **issues** such as the **design review** and **operational preparation**. In the second, the **marketing team** received an **honorable mention**.

During these **presentations**, the team was **ranked** in the **top 5** of the competition.



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**The 2024 competition challenges**

The **competition** includes “tasks” or **missions**, during which the teams must **develop** and **build tools** to use in the race. **This year, a robotic multi-tool was designed** for the **drivers** to use in **specific tests**.

**IKTAN** created a **pincer** that is **operated** by a drill **motor**. This was used in various tasks, such as wiring **tests, circuitry, and collecting samples** to earn **points** during the **event**.

***“The rover project was a great experience in which I developed skills while representing Mexico.” - Fernanda Rivera***

***“The rover project was a great experience during which I developed manufacturing, teamwork, and leadership skills while representing Mexico and feeling supported by all Mexicans,”*** shared team member Fernanda Rivera.

This year, the team **reduced** the **rover’s weight** by **25%** and **simplified** its **design** by including fewer components.

New **wheels** were also **designed** in collaboration with [campus training partners](#), which were **larger** and more **resistant** than those used in previous versions.



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## 2024 NASA Human Exploration Rover Challenge

Inspired by the **Apollo and Artemis missions**, **NASA's annual challenge** draws **students** from around the world to **design rovers** capable of human **space exploration**.

**HERC** asks **student teams** to develop **rovers** for **challenging terrain** and mission tasks. The competition includes **travel** over **simulated terrain** such as **asteroids** and ancient **riverbeds**.

This is the **only competition** organized by **NASA** in which non-American **teams** can participate. It forms part of the Artemis program that aims to take the **first woman** and the **first man of color** to the **moon**.

Two **students**, at least one of whom must be a **woman**, **drive the rover** on a **course** of approximately **half a mile**. This year, the **team** appointed **Diane Zenil** and **Josué Romero** as the drivers, both of whom are sixth-semester Mechatronics Engineering **students** with a three-year **history** in the competition.

“Participating in the **project** has been one of the best **decisions** I’ve **made**; the **excitement** of being on the **track** can’t be **described**,” said Diane Zenil, after her participation as a driver.



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### **A team with a track record of success**

**IKTAN Roving** means “ingenious” in **Mayan** and has won the following **awards** since **2013**:

- **Worldwide top 7 (2024)**
- **Ingenuity Award (2022, 2023)**
- **Crash and Burn Award (2023)**
- **Overall Winner (1st place, 2022)**
- **Overall Winner (2nd place, 2021)**
- **STEM Engagement Award (2021)**
- **AIAA Telemetry/Electronics Award (2014, 2016 and 2020)**
- **“Jesco von Puttkamer International Team Award” (2016, 2017, and 2019)**
- **Team Spirit Award (2018)**
- **Frank Joe Sexton Memorial Pit Crew Award (2017)**

“The **IKTAN Roving** team has **established** itself as one of the most **complete competitive** teams in the competition and, throughout its **12 years of participation**, has set a **benchmark** for international teams,” said David García, team mentor.

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