
2027
World Contest
CANSAT
Registrations open
until November 6
peu.unam.mx
Guest country:
ITALY
PEU
UNAM
PEU
PROGRAMA ESPACIAL UNIVERSITARIO
DGDCUNAM
Ambasciata d'Italia,
Città del Messico

CANSAT WORLD CONTEST 2027

PROGRAMA ESPACIAL UNIVERSITARIO

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Revision History

Version	Date	Section	Pg.	Description of Change
1	2025/09/22			Editable 2027 Mission Guide base document.
2	2026/06/10	All	All	Incorporation of the 2027 DeTerrA Mission's template.
3	2026/08/08	All	All	2027 DeTerrA Mission's technical content upgrade.
4	2026/09/23	All	All	English version first release.

CONTENT

10 Recommendations for the participant teams

11 General provisions for participation

PREFACE

We live in an age in which technology progresses at an extraordinary speed; artificial intelligence is no longer science fiction, and it evolves every day. Many dreams that, for centuries, seemed unreachable or mere products of imagination are becoming reality. Explorations of Mars and the Moon make clear that robotic exploration of the surface of celestial bodies is now unstoppable.

In the *Programa Espacial Universitario* (PEU - University Space Program), we consider it important to encourage youths to think about the current challenges of space exploration. Therefore, although the origin of this contest is based on the CanSat concept, this year we have decided to take the mission a step further by incorporating a rover: a small machine destined to venture where we cannot yet reach.

Furthermore, in the PEU we believe that science and technological development require imagination to emerge and evolve, and this is hardly ever cautious; rather, it is often bold and sometimes even absurd. It is precisely from these apparent inconsistencies that questions often arise, forcing us to move forward until they become new machines, knowledge, and paths that did not exist before.

Perhaps Lucian of Samosata never thought that someday it was going to be possible to get to the Moon, just as he narrates it in *Trips to the Moon*, part of his *True History*. Perhaps Leonardo da Vinci never imagined that some of his designs for flight would someday become reality. It is clear that his ideas motivated a lot of people over the centuries, eventually contributing to the achievements that we know today.

For that reason, we don't want the mission to be just a technical challenge. We accompany it with a story in hopes of awakening the imagination, inviting people to think beyond what is possible and to remind those who participate in it that, before building what we dream of, first we must dare to imagine it.

Ana Carolina Keiman Freire, MSc.

MISSION'S NARRATIVE

GUEST COUNTRY: ITALY

Monte Gennaro, Roman province, August 11th, 2088

The renowned philosopher and mathematician Pascolino inhaled the mountain's dense air, and a suffocating temperature of fifty degrees Celsius invaded his innards.

The Earth was melting!

Despite the discomfort, he looked out with satisfaction at the adjacent desertic valleys before going back inside to the shelter where he had moved when Rome started to empty out, even of tourists.

He let out a sigh, indistinguishable from the mechanically processed air in his hideout. He was happy with his latest finding, which seemed to confirm the theory he had supported for years: it was on Venus, that planet at first glance so similar to ours, where the human species had originated and evolved before migrating to Earth.

Once he was back at his study, the space in which sophisticated instruments for celestial watching were placed in the center, he looked at the walls that were covered with ancient books: *De rerum natura*, by Lucretius; *Metamorphoses*, by Ovid; *Natural History*, by Pliny the Elder; and *Astronomica*, by Manilius. The ones from the Roman period made up one of the richest sections of his library. He then wondered how many, among those who had received and passed on the symbolic torch of scientific curiosity, had an idea of the origin of humankind: possibly the Etruscans, which is why they interpreted celestial phenomena with the discipline that characterized them; or maybe the Romans, who learned to find their way and to measure time with that spirit of theirs, willing to map itself out ever further into the land, and with the ambition to envision a single and inclusive town beneath the stars.

As if she had read his mind, or as if she were picking up where a conversation had been left off so many times, Vera, Pascolino's partner, interrupted his musings from the imposing contraption that was searching the sky, just a few steps away from him:

"I am sure Leonardo sensed it. That's why he wanted to experience the thrill of flying firsthand. Perhaps it was nothing more than a longing to return. Galileo must have suspected it too; so he aimed his telescope at the sky for the first time. He knew that the philosophy was written in the grandiose open book right before our eyes: the universe. All we had to do was decipher his mathematical language, the language that brought us here, to the chosen planet."

"Or perhaps Guglielmo Marconi, and that is why he sent signals traveling through space, transforming air into communication territory, which is so necessary for us humans to understand ourselves better," Pascolino whispered, walking towards Vera.

What an extraordinary baton he had been tasked to carry on, Pascolino thought, wiping the sweat drops that, despite the powerful, frigid air conditioning, kept rolling down his neck before kissing Vera. The brief contact of his lips against hers made him feel a thrilling shiver, and when they separated, he felt invigorated. With renewed energy, he sat down at his desk and continued the email he had started:

> *. . . thanks to the collaboration with the Cooperative of Artificial Intelligence United, we achieved to connect our most recent observations with millennia-old research patterns, including the ones found on the Dresden Codex, which suggests that human life could have originated on Venus, the brightest planet in our sky, the Morning Star, as Tlahuizcalpantecuhtli was known by the Mesoamerican civilizations. In the attached document you may find the specifications of this finding. . .*

Just a few hours after sending his statement to the world's main knowledge centers, the first answer came. It was from the most prestigious university across the ocean: the glorious National Autonomous University of Mexico, with which he had collaborated on other occasions.

> *Dear Professor Pascolino:*
>
> *It is always a pleasure to receive the findings of your research. As for us, we are ready for the challenge. Finding signs of human life on Venus and the possible motives for which human beings decided to abandon it, if confirmed, will be our priority during the international mission we have named VENUSSIAMA-1. We will start with the arrangements right away.*
>
> *The satellite will be launched in May of the next year. Field research teams will travel across the surface of this inhospitable planet using rovers equipped to communicate with each other and with the ground station, collect samples, and transmit images and video in real time. . .*

Vera, as she listened to her partner reading the answer aloud to her, all the while gazing at

the sky, her favorite pastime, exclaimed:

"VENUSSI-AMA!?" emphasizing the last syllable. "Mexicans have not forgotten that in ancient Rome Venus was the goddess of love, fertility, and creation!

—*"L'amor che move il sole e l'altre stelle"*. She hummed, citing the last verse of The Divine Comedy, by Dante. "Let's see if, on this expedition, they don't end up uncovering the mystery of love, which holds the enigma of creation and life. . . So many scientific advances and no one has been able to unravel one of the most basic human mysteries!"

Pascolino looked at her with that love that moves the universe, but some people prefer to leave unresolved. He smiled at her as he shook his head; he said to her as a sign of agreement:

"There are mysteries that don't need to be revealed. I'm content just to prove our theory and understand if the reason we left Venus is the same one that's making us leave Earth. I love this planet as much as I love you, and I still hold hope to somehow keep it safe. Perhaps I am more of a dreamer than a scientist, but I'll fight until the very last minute."

Original story by Claudia Marcucetti Pascoli

1. Background

The CanSat World Course-Contest has evolved into an educational platform that simulates real space missions through the creation of CanSats. In previous editions, the main focus consisted of the deployment of the CanSat using a drone.

For the 2027 edition, a new mission paradigm is being introduced: surface operations, integrating a rover-type mobile robotic system with a CanSat called CanSat with Autonomous Terrestrial Displacement (DeTerrA).

This new modality aims to simulate scenarios of robotic exploration of the surfaces of celestial bodies, in which surface-contact vehicles transport, deploy, and activate scientific instruments.

2. Call on for the Course-Contest

The Programa Espacial Universitario of the Universidad Nacional Autónoma de México (UNAM) calls on universities and higher education institutions around the world to take part in the 2027 CanSat World Course-Contest.

1. The teams will consist of a minimum of five and a maximum of ten students, of whom only three may be graduate students; the rest must be undergraduate students.
2. The students must be registered in an official higher education institution of any country.
3. Each student can only join one team enrolled in the contest.
4. Each team needs an academic advisor. The advisor must be an active academic in the institution in which at least 50 % of the students are registered. The advisor should commit to giving technical advisory to the team during the entire Course-Contest.
5. A person cannot be both an advisor and a contestant. Therefore, a student cannot be listed twice on the team's registry.
6. Every advisor can be in charge of a maximum of two teams.
7. The teams' registration to participate in the contest will start on September 25th, 2026, at 9:00 h (Mexico City's time zone, UTC-06:00) and continue until November 6th, 2026, at 23:59 h (Mexico City's time zone, UTC-06:00).
8. To register, it will be necessary to fill out a registration form on the PEU's official website: https://peu.unam.mx.

Additional information

1. The review team for each stage of the contest will be assigned based on autonomy and impartiality criteria by the coordinator and mission leader of the PEU.
2. The jury's decisions are indisputable.
3. Recognition will be awarded to the teams that place in the top five, along with gifts subject to the organizers' budgetary availability.
4. All unforeseen situations that may come up during the contest will be resolved by the CanSat World Course-Contest organizers, and their resolutions will be indisputable.
5. The only official communication channels through which the organizing committee of the CanSat World Course-Contest shares information are the Classroom platform and the PEU's official social media.

Contact information

E-mail: peu@astro.unam.mx

Official social media of the Programa Espacial Universitario (PEU):

- **Facebook:** PEU Programa Espacial Universitario de la UNAM
  https://www.facebook.com/peu.unam/
- **Instagram:** PEU UNAM
  https://www.instagram.com/peu.unam/
- **X:** PEU UNAM
  https://x.com/peu_unam
- **LinkedIn:** PEU Programa Espacial Universitario de la UNAM
  https://mx.linkedin.com/company/programa-espacial-universitario
- **YouTube:** PEU Programa Espacial Universitario de la UNAM
  https://www.youtube.com/channel/UCFY-oo-omkfDpJKdPsIDbtQ
- **TikTok:** PEU UNAM
  https://www.tiktok.com/

3. Mission Overview

The mission consists of raising a satellite to an altitude between 30 and 50 meters, from which it will free-fall.

The satellite must have an appropriate compartment to accommodate a crewmember (a chicken egg), who must survive the free-fall's impact. Additionally, it must be equipped with everything necessary, including electronics and an onboard computer to transmit acceleration telemetry, geoposition, pressure, and temperature.

Once the satellite reaches the ground, it must activate an autonomous mobile robotic system (rover) capable of carrying the crewmember and traveling autonomously to its ground station within 3 minutes.

As an additional mission, the satellite will be able to transmit video in real time to its respective ground station, from where it will be broadcast through the team's social media from the moment of launch until the end of the mission.

4. Mission Objectives

4.1 Main objective

Develop a DeTerrA CanSat able to survive a free-fall from 30 m to 50 m, to protect the crewmate, and to autonomously travel to its ground station.

4.2 Specific objectives

1. Ensure the survival of the mission's astronaut (chicken egg) after the impact.
2. The CanSat, using its ground-based system, must navigate towards its ground station and get to it as close as possible.
3. Keep continuous communication throughout the mission with its ground station, sending in real time acceleration telemetry, geoposition, pressure, and temperature.
4. Optional bonus mission: Being able to broadcast a live video, captured by their DeTerrA CanSat during the ground navigation phase, which must be broadcast on the team's official social media from their ground station.

5. Mission requirements and technical specifications

In this section, the requirements and technical specifications that the DeTerrA CanSat must have are presented. For further details, see figures 1 and 2. The space mission starts from the moment the satellite is placed on the drone.

5.1 About the satellite

The DeTerrA CanSat must:

Code	Requirement
RQ-01	Be contained within a volume with maximum dimensions of **150 mm × 150 mm × 200 mm**. For a better understanding of the dimensions, see figure 1.
RQ-02	Have a freely chosen form factor, provided it complies with the dimension restrictions established in requirement RQ-01.
RQ-03	Contain throughout the mission a chicken egg as payload (crewmember). Take into account that the egg's mass will be **60 ± 10 grams**, and will be provided on the day of the launch.
RQ-04	Allow the integration of the egg into the satellite in less than 15 minutes.
RQ-05	Have a **maximin mass of 900 grams**, not including the egg's mass.
RQ-06	Incorporate an eye lag-type attachment system to ensure safe transportation at an **altitude** of **30 to 50 meters** and to allow its release. For an example, see detail A in figure 1.
RQ-07	Ensure that the center of mass is located in accordance with the requirements in figure 2.
RQ-08	Have a power or battery system capable of withstanding all the mission functions, including sensing, processing, and video (optional), for the duration of the mission.
RQ-09	Have a master on/off switch to prevent the battery from draining while waiting for the launch. ***Note.*** *The manipulation of this switch must be in such a way that it is not necessary to use tools or disassemble satellite components.*

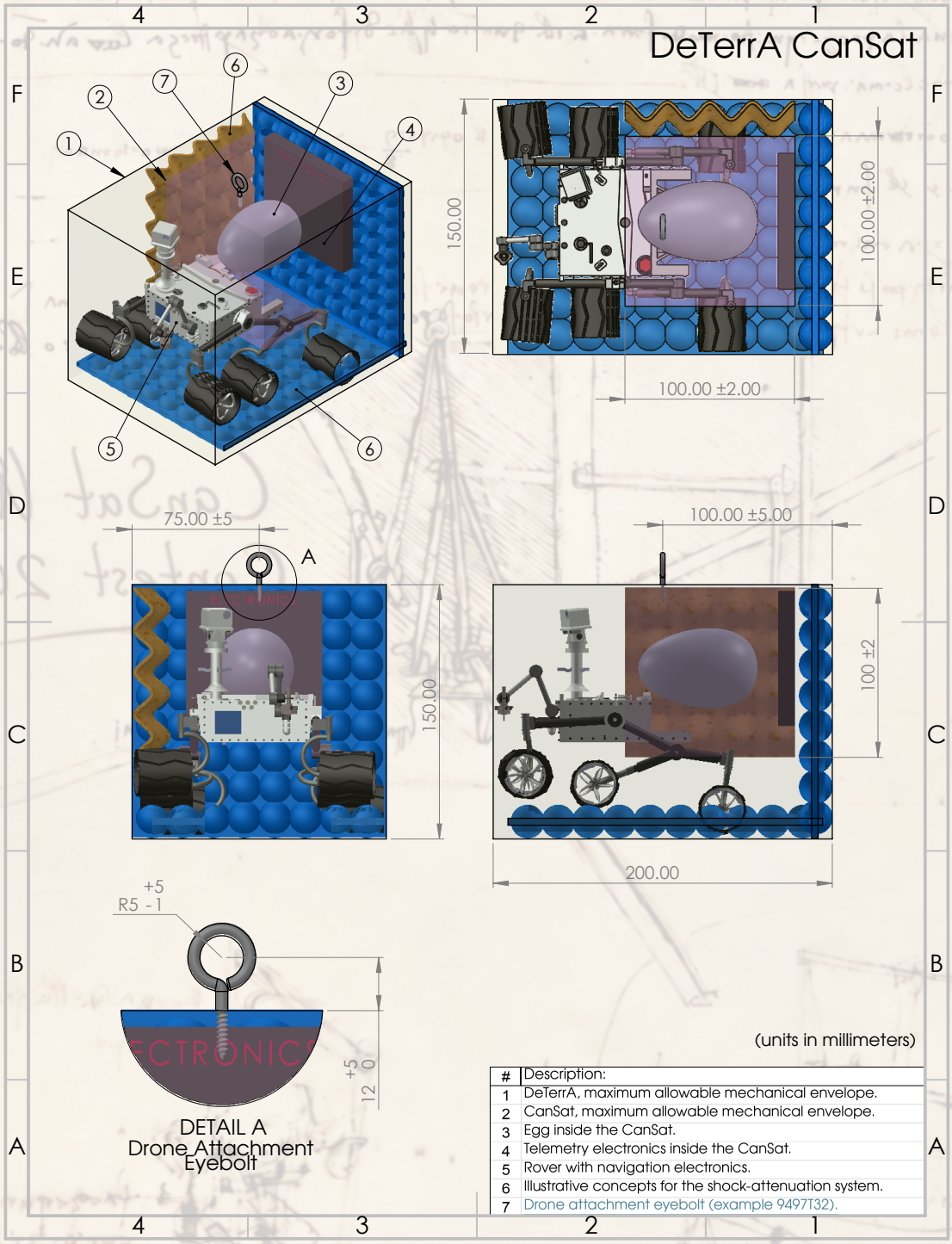

Figura 1: Dimensions of the DeTerrA CanSat's mechanical envelope and attachment hook. The elements included inside the mechanical envelope described here are illustrative and do not define the shape or arrangement of any subsystems.

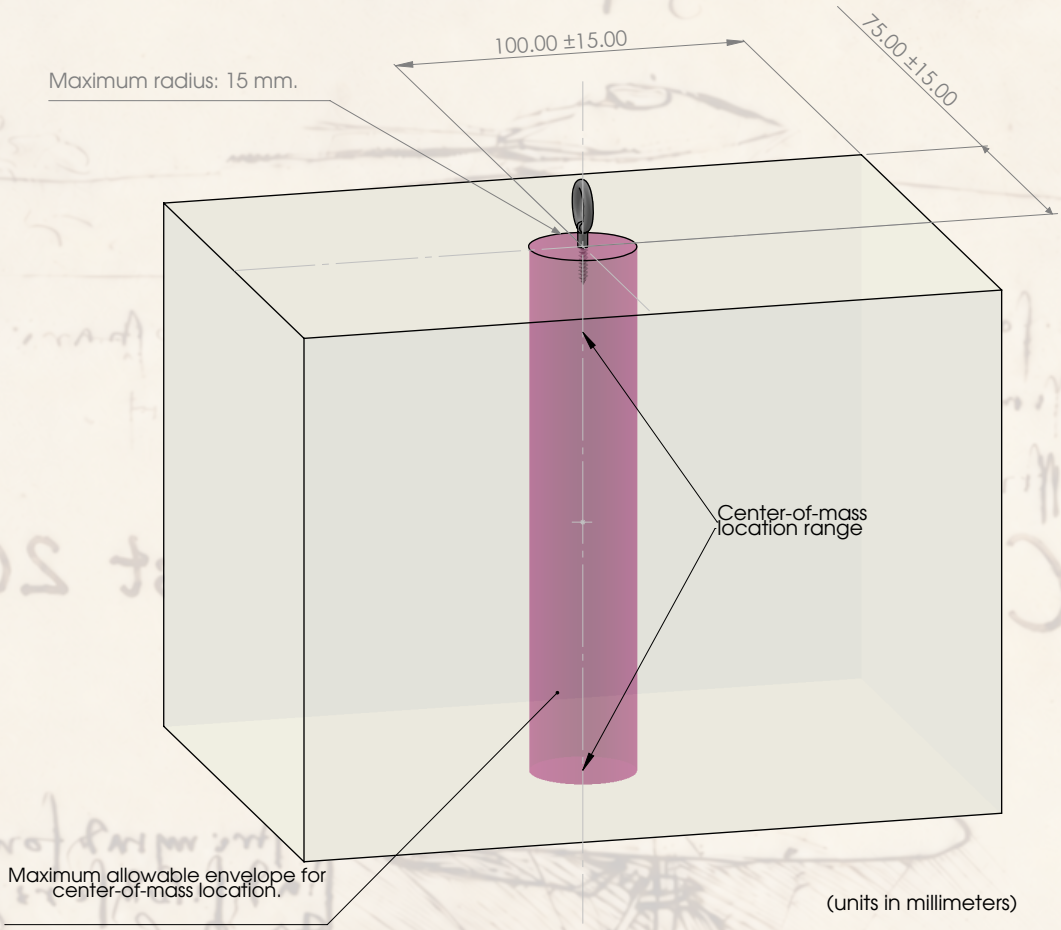

Figura 2: Maximum range and mechanical envelope of the DeTerrA CanSat's center of mass position.

5.2 During the launching phase

During the launching phase, the DeTerrA CanSat must:

Code	Requirement
RQ-10	Perform a free-fall descent. It must not have any aerobraking or deceleration system.
RQ-11	Withstand the impact from the descent without losing any critical functionality for the mission, including the overall survival of the chicken egg.

RQ-12	Incorporate a communication telemetry module (acceleration, geoposition, pressure, and temperature), whose technology and operational frequency are documented in the design documents and can be adjusted in case of interference between devices. ***Note.*** *In case of interference between signals during launch, the organizers of the contest can request a change in the frequency being used; therefore, it is recommended to anticipate this situation.*
RQ-13	Transmit telemetry (acceleration, geoposition, pressure, and temperature) in real time to the ground station throughout the mission.
RQ-14	Start its autonomous displacement after making contact with the ground and head toward the marker at its ground station within the established time of **180 seconds**. The evaluation will take into account the distance traveled, net progress toward the ground station, the general direction of the displacement, final proximity to the objective, and the operative continuity of the mobile system.
RQ-15	*Optional bonus mission:* Broadcast in real time (live) through the team's social media throughout the mission, captured by the DeTerrA CanSat. Consider using a frequency band and an antenna different from the ones being used for telemetry.

5.3 General requirements for the mission

In general, throughout the mission:

Code	Requirement
RQ-16	Perform the mission without outside interference during all the operational phases.
RQ-17	Consider that the launches will take place individually and consequently.
RQ-18	The DeTerrA CanSat must be maneuvered by a single team member, other than the person in charge of the ground station.
RQ-19	The ground station must be monitored by a single team member, other than the person responsible for the satellite.

6. Restrictions

The DeTerrA CanSat must comply with the following restrictions, within which the solution must be developed.

Code	Restriction
RS-01	The use of commercial parts or subsystems is allowed, provided that the architecture, integration, configuration, programming, validation, and operation of the DeTerrA CanSat are developed and documented by the team.
RS-02	The DeTerrA CanSat's rover must travel through a surface of unknown characteristics, so it must have the traction and necessary characteristics to operate in varied terrain.
RS-03	The total cost of the DeTerrA CanSat must not exceed 700 USD.
RS-04	Do not use fluids in the payload (chicken egg) suspension system.
RS-05	Do not tamper nor modify in any way the chicken egg.
RS-06	Use the chicken egg provided by the Course-Contest organizers.
RS-07	Use only commercial batteries that have not been tampered with or modified.
RS-08	It must not receive transmissions from the ground station or from human operators during the mission.
RS-09	Use materials that do not require specialized personal protective equipment to handle them.
RS-10	Do not use compressed gases.
RS-11	Do not use deflagration, explosive, or pyrotechnic materials.

7. Success Criteria

The success criteria to determine whether the mission complies with its essential objectives are:

Code	Success criteria
CM-01	Egg's survival.
CM-02	Keep the structural integrity of the DeTerrA CanSat after the descent.
CM-03	Displacement time to the ground station within the established time of 180 seconds.
CM-04	Transmit telemetry throughout the mission.
CM-05	Comply with the requirements and specifications (section 5) and do not violate the restrictions in section 6.
CM-06	*(Optional. Bonus mission)* Transmit video to the ground station.

CM-07	*(Optional. Bonus mission)* Broadcast the obtained video from the CanSat through the team's social media.

8. Course-Contest stages

The Course-Contest is divided into five stages in which each contestant will carry out theoretical and practical activities that will help them build the DeTerrA Satellite.

Throughout the stages, the teams will submit the requested documents. These will be evaluated and analyzed by the *Programa Espacial Universitario* evaluation committee. According to the results, the organizers will duly inform the teams that will continue with the next stages. The stages that require the submission of documents will have specific templates that will be shared on the online platform. At the end of stage 5, the award ceremony for the teams with the best results will take place.

No documents will be received by any means after the assigned time.

8.1 Registration

Start date for registration	Deadline for registration
Friday, September 25th, 2026	***Friday, November 6th, 2026***
09:00 h (UTC−06:00, Mexico City)	*23:59 h (UTC−06:00, Mexico City)*

Each team must be registered on the registration form available on the official website of the PEU (peu.unam.mx).

Required information:

- Team members and advisors' registration.

  Please note that registered names will be used exactly as they were entered when generating participation certificates, so it is essential to verify that the information provided is correct and that the members' names and email addresses are spelled correctly.

- Defining the distribution of work amongst the team based on the proposed areas.

Once the enrollment process is done, and in case of being accepted, an invitation to the online platform will be sent, where the contestants will work on the course units.

Note. A Google account will be necessary to fill out the registration form. It is recommended to make an institutional account for the team since only one account per team enrolled in the Course-Contest will be registered. If there is not an institutional account, the leader's account will be used.

8.2 Stage 1: Conceptual Design Review (CoDR)

Start date of Stage 1	Deadline for file submission
Monday, November 16th, 2026	*Saturday, January 2nd, 2027*
09:00 h (UTC−06:00, Mexico City)	*23:59 h (UTC−06:00, Mexico City)*

In this stage, each team will develop the conceptual design of the different subsystems that constitute the DeTerrA Satellite, as well as the teamwork planning.

To be evaluated, the team must fill out the pertinent template and send it in **PDF** format with the name:

TEAMNAME-MC2027-CoDR.pdf

First opportunity to request changes to team members, through the submission of the CoDR, within the '*Mission Management*' section of the official template provided by the PEU.

8.3 Stage 2: Preliminary Design Review (PDR)

Start date of Stage 2	Deadline for file submission
Monday, January 11th, 2027	*Friday, February 5th, 2027*
09:00 h (UTC−06:00, Mexico City)	*23:59 h (UTC−06:00, Mexico City)*

In this stage, each team must develop the preliminary design of their DeTerrA Satellite, which means the preliminary ideas, diagrams, drawings, calculations, and programs that have been developed to achieve the mission's objectives.

To be evaluated, the team must fill the template and send it through the online platform in **PDF** format with the name:

TEAMNAME-MC2027-PDR.pdf

Second and last opportunity to request changes to team members, through the submission of the PDR, within the *'Mission Management'* section of the official template provided by the PEU. This will be the final opportunity to make changes that are reflected in the participation records of each team managed by the PEU.

8.4 Stage 3: Critical Design Review (CDR)

Start date of Stage 3	Deadline for file submission
Monday, February 15th, 2027	*Friday, March 12th, 2027*
09:00 h (UTC−06:00, Mexico City)	*23:59 h (UTC−06:00, Mexico City)*

In this stage, each team must report everything concerning the consolidated DeTerrA Satellite design. At this point, it is recommended to have all the subsystems ready to be integrated to begin the corresponding tests.

To be evaluated, the team must fill the stage-corresponding template and send it in **PDF** format with the name:

TEAMNAME-MC2027-CDR.pdf

8.5 Stage 4: Acceptance Tests

Start date of Stage 4	Deadline for file submission
Monday, March 22nd, 2027	*Friday, April 2nd, 2027*
09:00 h (UTC−06:00, Mexico City)	*23:59 h (UTC−06:00, Mexico City)*

In this stage, the teams must present the progress on the DeTerrA Satellite's construction prior to its launch. This guarantees that it complies with all the requirements and technical specifications marked

on this call on in chapter 5, as well as having the results of the suggested basic tests. This demonstration will be evaluated through a video **no longer than 2:30 minutes**, which must be uploaded to YouTube and shared it on the platform.

> To be evaluated, the team must upload the video to YouTube and share it on the platform, or directly to the course platform with the name:
>
> **TEAMNAME-MC2027-PA**

8.6 Stage 5: Certification and launch

Launch day

Saturday, May 22nd, 2027

All day

The fifth stage is when the CanSats are launched in person at Ciudad Universitaria facilities in Mexico City. On this day, the teams will finalize the PEU's established mission and will put the DeTerrA Satellite to the test.

Each team that reaches this stage will be assigned a specific site to perform the flight certification tests. The PEU staff will hand over the crew member (chicken egg) so that each team integrates it into their DeTerrA Satellite. A space will also be assigned to make the necessary adjustments before the flight certification tests.

If a device is not accepted in the first revision, a grace period will be granted to correct it. Once certification is approved, a launch turn will be assigned. From that point on, no further modifications to the satellite may be made.

If a team decides to take back its satellite from the launch queue, it will be penalized and have to undergo the certification process again in order to obtain a new turn.

Afterwards, the *Results and Mission Analysis Report (RAM)* must be elaborated and sent with the obtained findings, which must be submitted the same day of the launch.

8.6.1 Results and Mission Analysis Report (RAM)

The final Results and Mission Analysis Report (RAM) consists of two parts. The first one (Phase A) will be compiled with the information developed during the pre-launch phase. The second one (Phase B) will be compiled with the recorded data during launch.

8.6.1.1 PHASE A (Pre-launch)

RAM's first submission

Saturday, April 30th, 2027

18:00 h (UTC−06:00, Mexico City)

In this phase, the teams must submit:

- I. Nomenclature
- II. Introduction
- III. Technical description of the CanSat
- Appendix
- Acknowledgments
- References

To be evaluated, the team must fill the stage-corresponding template and send it in **PDF** format with the name:

TEAMNAME-MC2027-RAM-I.pdf

8.6.1.2 PHASE B (Post-launch)

RAM's second submission

Saturday, May 22nd, 2027

19:00 h (UTC−06:00, Mexico City)

For this second RAM submission, and the final part of the Course-Contest, the teams that have completed the launch must report the data obtained and the mission's conclusions. Teams must complete:

- IV. Analysis of the information obtained from the CanSat.
- V. Performance during the mission.
- VI. Conclusions.

To be evaluated, the team must fill the stage-corresponding template and send it in **PDF** format with the name:

TEAMNAME-MC2027-RAM-II.pdf

It is recommended to leave everything prepared in Phase A of the RAM and only complete the final delivery with the data obtained from the DeTerrA Satellite's flight. .

No documents will be received by any means after the assigned time.

8.7 Award ceremony

AWARD CEREMONY

Monday, May 24th, 2027

09:00 h (UTC−06:00, Mexico City)

The award ceremony will take place at UNAM's facilities.

The winning teams of the first ten places will be publicly announced through PEU's social media a day after the launch. Additionally, the teams will be directly notified through a phone call or a message, according to the contact information provided during registration. In said communication, the teams will be informed of the place where the award ceremony will take place.

Teams are requested to be **punctual and to attend the event**.

The team members and the advisor must attend the event. Access for guests or team members who are not among the top ten will depend on the space availability at the place selected for the award ceremony.

The participation certificates for the team members and their advisor who are able to attend the launch stage will be sent by email in the days following the award ceremony.

9. Evaluation criteria

Throughout the CanSat World Course-Contest, the teams will be evaluated according to their performance in the following areas:

Category	Characteristics	Value
Course	Interaction with the platform. Video review, participation in Q&A forums, answering questions, and submitting assignments throughout the contest.	15 %
Contest	▪ Team badge presentation. ▪ Content quality and presentation of documents of each stage. ▪ Submit the CoDR, PDR, CDR, and RAM documentation on time and in due form. ▪ Submit the video showing the acceptance tests on time and in due form. ▪ Comply with the requirements, restrictions, and technical specifications of the Mission's Guide.	35 %
Launch	▪ Survival of the chicken egg. ▪ Rover's performance. ▪ Data recollection: pressure, temperature, acceleration, etc. ▪ Comply with requirements, restrictions, and technical specifications of the Mission's Guide.	50 %
Optional bonus mission	▪ (Optional) Live broadcast of the video.	10 %
Total		**100 (+10) %**

The crewmember's survival (chicken egg) **is the main success criterion of the mission**; therefore, **it will carry the greatest weight** in the launch evaluation.

As a requirement to access the last stage, the certification and launch (8.6), the team's badge, the CoDR, PDR, CDR, the video of acceptance tests, and RAM must be submitted.
This requirement is indisputable.

9.1 Expected performance during the Course-Contest

Throughout the course-contest, the teams' performance will be evaluated, taking into consideration the quality, clarity, and authenticity of the information, the presented designs and results, as well as timely

and proper completion of activities and submissions. The ability to work in collaboration, organization, communication, and problem resolution will also be taken into consideration.

The submissions must comply with the content, format, extension, and nomenclature requirements established at each stage. The evaluation results will determine whether the teams advance to the next stages and will contribute to their final evaluation.

During the process, the application of the knowledge acquired for the design, construction, integration, testing, and operation of the satellite will be valued. On the final stage (the launch), compliance with the mission's objectives and requirements will be evaluated.

9.2 Factors to consider for the evaluation of each stage

For the evaluation of each stage, the following points will be taken into consideration.

Registration

- Correct registration of team members and team information.
- Submission of the requested documentation in the specified format.

Stage 1: CoDR

- Compliance with the established requirements for the satellite's design.
- Clarity and quality of the presented technical information.
- Justification of conceptual design decisions.
- Compliance with the template requirements and timely and in due form submission.

Stage 2: PDR

- Presentation of the detailed preliminary design of the satellite and the mission.
- Integration of the required technical, operational, and management aspects.
- Evidence of progress in construction and tests.
- Problem identification and solution.
- Compliance with the template requirements and timely and in due form submission.

Stage 3: CDR

- Progress and quality of the satellite's construction.

- Systems and components functionality.
- Compliance with requirements (section 5.1).
- Compliance with the template requirements and timely and in due form submission.

Stage 4: Acceptance tests

- Validation of test completion (via video).
- Presentation of the test results.
- Compliance with the requirements for the video production.

Stage 5: Launch

- Punctuality for the certification and launch.
- Compliance with the mission's objectives (section 4), requirements (sections 5.1 y 5.2), and restrictions (section 6).
- Egg integrity and satellite condition after landing.
- Proper operation of the satellite during the mission.
- The leaders' ability to answer the jury's questions.
- Submission of the final report (RAM), on time and in due form, including the technical description, diagrams, data analysis, results, and conclusions.
- Critical analysis of performance and the obtained results.

10. Recommendations for the participant teams

Participation in the CanSat World Course-Contest requires organization, discipline, communication, and teamwork. The development of a CanSat depends not only on a good technical idea, but also on the team's ability to transform that idea into a functional system that is documented, tested, and operated responsibly.

The following ten recommendations outline fundamental principles to guide the teams from the start of the mission and lay a solid foundation for the development of their project throughout the Course-Contest:

- **Read the entire mission guide:** Before starting the design, all team members must know the objectives, requirements, restrictions, success criteria, due dates, and evaluation criteria. It is advisable to prepare an internal summary of the specifications that must be met.

- **Define the responsibilities from the beginning:** Assign the people responsible for each subsystem: structure, protection of payload, electronics, power, communications, telemetry, software, rover, ground station, documentation, management, and logistics. All areas are important, and none should be considered secondary.
- **Justify your technical decisions:** Do not choose solutions based solely on intuition, availability, or personal preference. Each relevant decision must be based on technical arguments, tests, calculations, simulations, comparison of alternatives, mass constraints, volume, cost, safety, and feasibility.
- **Document the work from day one:** Record progress, decisions, tests, fails, design changes, photographs, diagrams, results, and conclusions as they occur. Do not wait until the end to write the reports; a good log makes it easier to elaborate the RAM.
- **Conduct meetings with clear agreements:** Schedule regular progress meetings. At the end of each meeting, register tasks, people in charge, due dates, and decisions made. A brief minute may prevent further confusion or disagreements.
- **Pay attention to mass, volume, and center of mass:** Frequently check whether the satellite complies with the maximum dimensions, allowed mass, and center of mass position. Do not wait until certification to verify these aspects.
- **Manage risks from the beginning:** Identify potential flaws: egg cracking, loss of communication, insufficient battery, rover immobilization, impact damage, interference, excess mass, mechanical incompatibility, or purchase delays. Define a preventive action for each risk.
- **Buy components in advance:** Take into consideration shipping time, availability, customs, component failures, and the need for replacement parts. Do not design the satellite around parts you cannot obtain in time.
- **Prioritize safety and responsibility:** No technical solution should compromise the safety of participants, organizers, the jury, the public, facilities, or equipment. If a solution requires hazardous materials or unsafe procedures, it must be discarded.
- **Remember the purpose of the contest:** The CanSat World Course Contest is a learning, engineering, creativity, and collaboration experience. Winning is important, but so is learning to design, test, make mistakes, correct them, document, and work as a professional team.

11. General provisions for participation

Authorization of use and distribution of the works

Participation on the CanSat World Course-Contest entails the authorization for the Programa Espacial Universitario (PEU) of the National Autonomous University of Mexico (UNAM) to reproduce, publish, communicate, and distribute, totally or partially, the documents, images, photographs, videos, designs, results, and other materials generated by the teams throughout the contest.

The use and distribution of these materials will be exclusively for academic, institutional, educational, scientific, and science popularization purposes.

The authorship of the works will be attributed to their respective authors and teams at all times.

Plagiarism, originality, and work duplication

All presented material throughout the Course-Contest must be a product of the team's work and must respect the principles of authorship, attribution, and academic honesty.

The total or partial reproduction of foreign works without due citation, the appropriation of designs, texts, codes, results, or other materials, as well as the submission of identical or substantially similar works by different teams, may be considered plagiarism or lack of originality.

If any of these situations are identified, the PEU reserves the right to disqualify the involved team or teams, regardless of the stage of the contest they may be in.

Responsible use of Artificial Intelligence tools

The use of Artificial Intelligence (AI) tools is allowed as a support resource, provided they are used in a responsible, complementary, and transparent manner, without replacing the team's analysis, reasoning, technical development, or decision-making.

All use of AI must be declared and cited, indicating which tool was used and its purpose.

The participants will be responsible for verifying, understanding, and justifying technically any content, code, analysis, design, or result presented.

The use of AI that compromises originality, authorship, or the formation process of the work may be considered during the evaluation and, in severe cases, result in the disqualification of the team.

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