

**Unmanned Autonomous Car (UAC26)  
Competition**  
Open to teams from Universities and Colleges

## **Announcing Students' UAC26 Competition** **Open to teams from Universities and Colleges**

Sultan Qaboos University is pleased to announce the Students' *Unmanned Autonomous Car* Competition (**UAC26**) in line with the 3<sup>rd</sup> International Conference on Unmanned Vehicle Systems (**UVS-Oman 2026**) organized by the College of Engineering, Sultan Qaboos University, February 09-11, 2026.

University teams are invited to design and develop a high-performance Autonomous Racing Car. The competition is open to teams from universities and colleges only. The competition includes three difficulty levels, with unique challenges and requirements for each. Each team should consist of 2-4 students.

### **Important Dates**

- **30<sup>th</sup> Jun 2025 – 30<sup>th</sup> Sep 2025:** Registration.
- **11<sup>th</sup> Oct 2025:** Technical Workshop.
- **27<sup>th</sup> Nov 2025:** Proposal & Video Submission.
- **04<sup>th</sup> Dec 2025:** Announcement of Qualified Teams.
- **05<sup>th</sup> Feb 2026:** Track Testing Day.
- **07<sup>th</sup> Feb 2026:** Competition Day.



Registration

### **Registration**

<https://forms.gle/wBDDgCvtWwsoZ1X97>

### **Awards**

- First Winner: 1,000 OMR
- Second Winner: 600 OMR
- Third Winner: 400 OMR

Winners will be selected based on performance score, which includes lap time, control strategy, obstacle avoidance, vehicle design, and team presentation. All qualified participants will receive certificates.

### **Location**

The UAC26 Competition will be held at the Al-Faham Stage at Sultan Qaboos University. Teams can later download the location map from the conference website.

**For enquiries,** please send email to [uvs-oman@squ.edu.om](mailto:uvs-oman@squ.edu.om)

**For more details,** kindly visit the website <https://uvsc.om>



## Students' UAC26 Competition Details

*Open to teams from universities and colleges*

### Description

The Students' **Unmanned Autonomous Car** Competition (**UAC26**) challenges students to design, build, and race a fully autonomous vehicle through a constrained and dynamic race track. The arena is designed to simulate real-world car racing scenarios.

### Track Specifications

- Width: 60 cm
- Length: Approximately 15–20 meters
- Features include:
  - Slightly sharp and smooth turns
  - High-speed straights

### Specifications of the Car

- Maximum dimensions: **30 cm (L) × 20 cm (W) × 30 cm (H)**.
- Maximum weight: **5 kg**.
- Power source: **On-board batteries**.
- Must operate **autonomously** (no manual or remote control).
- Possible sensors: ultrasonic, LiDAR, or camera for track, obstacle, and vehicle detection in Level 1 (obstacle avoidance) and Level 3 (racing).
- ROS2 is preferred for system integration, but teams may use any software.

### Competition Levels

#### Level 1: Time Trial Lap

The car must autonomously complete a single-lap time trial on a closed route that includes straight sections and curved turns.

- The car must stay within the track boundaries at all times.
- Scoring will be based on lap completion time and ability to navigate curves without contact with track borders (penalties will be applied if car hits the track boundary).





## Unmanned Autonomous Car (UAC26) Competition

Open to teams from Universities and Colleges

### Level 2: Time Trial Lap with obstacle avoidance

The car must autonomously complete a single-lap time trial on a closed route that includes straight sections and curved turns. With obstacles on the way

- The car must stay within the track boundaries at all times.
- Scoring will be based on lap completion time and ability to navigate curves without contact with track borders and without hitting obstacles.

### Level 3: Head-to-Head Racing

Two cars will race simultaneously on a dual-lane track with sections.

- Each car must avoid contact with the road edges and the opponent.
- Intelligent overtaking based on speed and timing is encouraged, but only if performed without side collisions.
- Unsafe driving, blocking, or crashing into the lane borders will result in penalties.

### UAC26 Competition: Rules

- Each team will have ONE round per level. Each round has a 5-minute time limit.
- Intervention is allowed only if:
  - Car is stationary for >10 seconds.
  - Car leaves the track.
  - Safety is compromised.

### Scoring

- Lap time – **50%**  
Evaluates how fast and consistently the car completes laps across all levels without collisions or stoppages.
- Track discipline and lane-keeping – **20%**  
Assesses the car's ability to stay within track boundaries during turns, straights, and overtaking without hitting borders or losing control.
- Car design and performance engineering – **10%**  
Evaluates mechanical design quality, weight balance, and component integration.
- Team presentation, control strategy and autonomy – **20%**  
Assesses clarity and depth of the team's explanation of their system design, control logic, and race strategy. In addition, the robustness of onboard control logic, responsiveness, and degree of autonomous operation.