NASA SPACE GRANT CONNECTICUT

Community College Drone Challenge (CCDC)

Request for Proposals (RFP)

2026-2027 Program Year

Overview

The NASA Connecticut Space Grant Consortium (CTSGC) invites proposals from faculty-led student teams at Connecticut State Community College campuses to participate in the 2026–2027 Community College Drone Challenge (CCDC). This hands-on engineering competition engages students in drone design, fabrication, programming, and flight operations while strengthening STEM pathways and supporting NASA's Aeronautics Mission Directorate.

The CCDC uses small multirotor drones (quadcopters, hexacopters, etc.) built from off-the-shelf components. Student teams will assemble, modify, and operate their drones to complete a series of technical challenges involving mechanical design, autonomous flight, mapping, photography, and sample retrieval.

This RFP outlines eligibility, expectations, application requirements, evaluation criteria, and the full program timeline.

Overview 1
Program Goals 2
Team Composition & Eligibility 2
Stipends & Funding 3
Application Requirements 3
Selection Criteria 4
Program Schedule 4
Challenge Rubric Summary 5
Submission Instructions 5
Required Student & Faculty Reports 6
Contact 6

Program Goals

The CCDC aims to:

- Increase the number of community college students who graduate with STEM degrees or transfer to four-year STEM programs.
- Strengthen faculty capacity to deliver aerospace and aeronautics-related content aligned with NASA priorities.
- Enhance student engagement through hands-on engineering, programming, and design challenges.

Team Composition & Eligibility

Student Eligibility

To receive the $1,000 stipend, students must:

- Be U.S. citizens.
- Be 18-years of age.
- Be enrolled a participating CT State Community College campus during Fall 2026 and Spring 2027.
- Be in satisfactory academic standing.

Students who do not meet all criteria may still participate but will not receive a stipend. All students must complete a final program report.

Team Structure

- Teams must include **3–5 students**.
- Each team must be led by **one full-time faculty advisor**.
- No prior drone or engineering experience is required.

Faculty Advisor Eligibility

- Must be a full-time faculty member at a CT State campus.
- Must provide a 1:1 institutional cost-share to match the $2,000 faculty stipend.

Stipends & Funding

Student Stipends

- Each eligible student receives a $1,000 stipend upon successful completion of the program and submission of required reports.
- For eligibility, students are expected to take part in **at least 80 hours of meaningful project work** during the program.

Faculty Stipend

- Faculty advisors receive **$2,000**, paid after submission of the final report.

Team Materials Budget

- Each team may request reimbursement for up to **$1,000** in supplies.
- All materials must be included in the faculty PI's proposal budget.
- Invoices must be submitted to the CTSGC office within **60 days** of the program end date.

Application Requirements

Faculty Advisor Application

Faculty advisors must submit:

- Team Information Form
- Faculty Narrative describing:
    - Recruitment strategy
    - Expected team support
    - Anticipated modifications and project approach
    - Plans for student skill development
- Budget worksheet with estimated stipend and material costs
- Research Training Certification document (taken within 12 months of application)

Student Application

Each student must submit:

- Transcript showing current enrollment and recent grades
- 1-page résumé or CV
- Survey of Skills
- Reference from a faculty or other academic or professional contact

Applications that are missing information listed above will be delayed in approval process.

NOTE: *In January, all approved students will be asked to provide updated transcript to show fall semester grades and spring class enrollments.*

Selection Criteria

If applications exceed available slots, teams will be selected based on:

1. **Regional distribution** across CT State campuses.
2. **Team size**, with preference for teams of five.
3. **Campus support**, including funding from clubs or external partners.
4. **Strength of faculty narrative** and likelihood of team success.

A minimum of **five teams** will be selected for the 2026–2027 challenge.

Program Schedule

Key Dates

Date	Milestone
October 23, 2026	Priority application deadline (rolling until filled)
October 31, 2026	Accepted teams notified
November 6, 2026	Mandatory Kick-off Meeting at New England Air Museum (10:30 AM–1:00 PM)
March 6, 2027	Suggested supply purchase deadline
April 9, 2027	Drone Challenge at University of Hartford
April 24, 2027	Team reports due
May 15, 2027	All final paperwork due

Kick-off Meeting

At least one representative from each team must attend in person to collect drone kits. The session will cover safety, expectations, and introductory skills.

Fall – to – Spring Development Phase

Teams will:

- Build and test their drone.

- Practice safe indoor and outdoor flight.
- Register drones for outdoor use via FAA DroneZone.
- Design and fabricate:
    - Rotor protection
    - Camera mount
- Prepare a 2–3 minute YouTube video describing their drone.
- Create a poster for the Flight-Readiness Review.
- Submit all required documentation.

Challenge Day

Teams must:

- Check in between 10:30–11:00 AM.
- Present their video and poster.
- Complete technical demonstrations according to the rubric.
- Perform autonomous flight, mapping, photography, and sample retrieval tasks.

Challenge Rubric Summary

Teams will be evaluated on a 135-point rubric covering:

- **Video (10 pts)** – clarity, content, and professionalism.
- **Poster & Presentation (10 pts)** – organization and delivery.
- **Weight Reduction (10 pts)** – overall weight and innovation.
- **Rotor Protection (10 pts)** – CAD design, fabrication, attachment, effectiveness.
- **Camera Mount (10 pts)** – design, fabrication, switching capability.
- **Multi-Pilot Flight (10 pts)** – three pilots demonstrating basic flight.
- **Sample Return (15 pts)** – gravel, sand, and water retrieval.
- **Autonomous Flight (20 pts)** – takeoff, hover, obstacle clearance, mapping, autonomous sample return.
- **Photography (15 pts)** – horizontal, vertical, and landscape targets.
- **Mapping (25 pts)** – 2D and 3D map reconstruction and accuracy.

Submission Instructions

Applications must be submitted using the CTSGC Smartsheet links provided in the program announcement and on the website.

All required reports, videos, posters, and documentation must be submitted electronically as instructed by the CTSGC office and/or Challenge Director.

Required Student & Faculty Reports

Post-Challenge Requirements

Students:

- Submit Student Report within 15 days.
- Complete Post-Survey of Skills.

Student Report

Students must describe:

- Skills gained
- Team contributions
- Challenges encountered
- Reflections on STEM learning

Faculty Advisors:

- Submit Faculty Report within 15 days.

Faculty Report

Faculty advisors must describe:

- Student team members
- Team progress
- Student engagement
- Outcomes and recommendations

Contact

For questions regarding the CCDC program or application process, please contact the NASA Connecticut Space Grant Consortium at the University of Hartford.

- April Michaud, Program Manager – csgcinfo@hartford.edu
- CTSGC Student Staff - ctsgstaff@hartford.edu

This RFP provides all necessary information for faculty advisors and student teams to prepare competitive proposals for the 2026–2027 Community College Drone Challenge. We look forward to your participation and innovative drone designs.