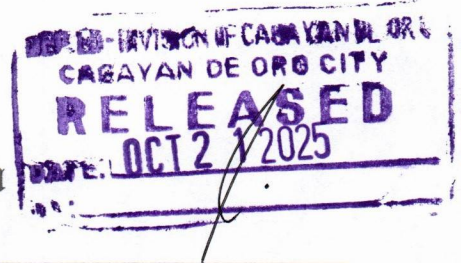




Republic of the Philippines
Department of Education
REGION X
DIVISION OF CAGAYAN DE ORO CITY



Office of the Schools Division Superintendent

20 Oct 2025

DIVISION MEMORANDUM

No. 935 s. 2025

TO: Asst. Schools Division Superintendent
Chief, Curriculum Implementation Division
Public Schools District Supervisors
Concerned Education Program Supervisors
Public and Private Elementary and Secondary School Heads
This Division

**ADDENDUM AND CORRIGENDUM TO DM NO. 870 S. 2025 OR THE
DIVISION SCIENCE AND TECHNOLOGY FAIR WITH THE FIRST ROBOTICS
COMPETITION cum TRAINING-WORKSHOP ON MINECRAFT EDUCATION**

1. This Office hereby informs the field of the changes in the schedule of the **Division Science and Technology Fair with the First Robotics Competition cum Training-Workshop on Minecraft Education** originally set on October 21, 2025.

2. The activity has been rescheduled to give participating schools ample time to prepare for the competition and training-workshop. The updated schedule is as follows:

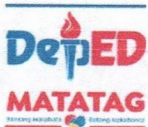
- **New Date:** October 28, 2025
- **Venue:** Cagayan de Oro National High School
- **Time:** Registration will start at 7:00 A.M.
- **Opening Program:** 8:00 A.M.

3. Enclosure No. 1 attached to this Memorandum shall replace Enclosure No. 1 of the previous memorandum.

4. The following are the additional technical working group for the Robotics competition;

1. Cherry Lou Pahapay – West City Central School
2. Saike Jane M. Ormichigos- Bulua NHS-Camp Evangelsita Annex
3. Julius O. Tan – Gusa Regional Science High School-X
4. Noribelle Baculio- Cagayan de Oro NHS-JH

5. All other provisions in the previous Memorandum remain in full effect.



Address: Fr. William F. Masterson Ave., Upper Balulang, Cagayan de Oro City
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Website: <https://depedcdo.net/>

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6. All interested schools are requested to accomplish the pre-registration through this link, <https://tinyurl.com/2025DSTFpre-reg> on or before October 27,2025.
7. Softcopy of research entries in all categories shall be emailed on October 27,2025 on or before 12:00 noon to evelyn.sumanda@deped.gov.ph and prepare three hardcopies during the actual contest.
8. In adherence to Equal Opportunity Principle (EOP), inclusive and fair treatment shall be accorded to all concerned/participants regardless of disability, sexual orientation, gender, age, religion, and ethnicity.
9. This Office directs immediate and wide dissemination of this Memorandum.

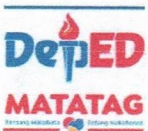
ROY ANGELO E. GAZO
Schools Division Superintendent

Encl.: As stated
Reference: As stated
To be indicated in the Perpetual Index
under the following subjects:

CURRICULUM SCIENCE FAIR TRAINING

DM- 184 -CID-IM-EQS / ADDENDUM AND CORRIGENDUM TO DM NO. 870 S. 2025 OR THE DIVISION SCIENCE
AND TECHNOLOGY FAIR WITH THE FIRST ROBOTICS COMPETITION cum TRAINING-WORKSHOP ON
MINECRAFT EDUCATION

October 20, 2025



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Enclosure No. 1 Criteria, guidelines, specifications and scoring system

ROBOLIKHA Cagayan de Oro Division Robotics Competition 2025

Venue: Cagayan de Oro National High School – Junior High School

Date: October 29, 2025

Partners: Department of Education – Division of Cagayan de Oro & University of Science and Technology of Southern Philippines (USTP)

I. RATIONALE

In line with the Department of Education's goal to strengthen Science, Technology, Engineering, and Mathematics (STEM) education through experiential learning, the **ROBOLIKHA Cagayan de Oro Division Robotics Competition 2025** aims to provide a platform for learners to apply robotics and programming skills through hands-on, competitive, and collaborative challenges. The event, jointly organized by **DepEd Cagayan de Oro** and **USTP College of Technology**, promotes creativity, critical thinking, and innovation, preparing students for higher-level robotics competitions such as the **Regional Science and Technology Fair** and the **National Robotics Competition (NRC)**.

II. OBJECTIVES

1. Develop students' competence in robotics, automation, and coding.
2. Encourage innovation, problem-solving, and engineering design skills.
3. Promote teamwork, sportsmanship, and ethical competition.
4. Strengthen partnerships between DepEd and higher education institutions in advancing STEM education.
5. Identify potential representatives for regional and national robotics competitions.

III. GENERAL GUIDELINES

1. **Eligibility**
 - o Open to elementary and secondary students in the Division of Cagayan de Oro.
 - o Each team may consist of **1-2 student participants** and **1 coach**.
 - o Participants must compete only in their assigned category.
2. **Robot Specifications (General)**
 - o Any **microcontroller platform** is allowed (Arduino, ESP32, Makeblock, mBlock, etc.).
 - o Robots may be **pre-built or assembled on-site**.
 - o Robots must have **independent battery power**.
 - o Robots must **not damage the field or other robots**.
 - o **Expanding robots** are allowed only where specified.
3. **Programming Platforms**
 - o Allowed: mBlock, Arduino IDE, Python, C/C++, MicroPython.
4. **Sportsmanship and Conduct**
 - o Participants must display respect and integrity at all times.
 - o Coaches and spectators may not assist during matches.

- Misconduct or tampering may lead to disqualification.
5. **Objections and Decisions**
- Only players may raise an objection within 1 minute after a round ends.
 - The referee and judge confer; the **judge's decision is final**.

IV. OFFICIAL CATEGORIES / EVENTS

Category	Level	Robot Type	Weight / Sensors Limit
1. Sumobot Beginner	Elementary	RC	500g, 10×10 cm
2. Sumobot Intermediate	High School	Auto	1kg, 20×20 cm
3. Line Tracing Beginner	Elementary	Auto	Max 4 sensors
4. Line Tracing Intermediate	High School	Auto	Max 8 sensors

V. DETAILED RULES AND SPECIFICATIONS

- Misconduct or tampering may lead to disqualification.
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4. Line Tracing Intermediate	High School	Auto	Max 8 sensors

V. DETAILED RULES AND SPECIFICATIONS

A. SUMOBOT (500g / 1kg)

Event Type: 1 Robot per Team (1–2 Players)

Control Mode: Autonomous (Auto) / Remote Controlled (RC)

Competition Format: Round-Robin Elimination followed by Double-Elimination Finals

Objective: Two robots compete head-to-head in a match. The goal is to push the opponent out of the circular ring ("Dohyo"). The last robot remaining inside wins the round.

1. ROBOT SPECIFICATIONS

Category	Max Weight	Max Dimensions (L×W)	Height Limit	Control Mode
500g	500 g	10 × 10 cm	No limit	RC
1kg	1,000 g	20 × 20 cm	No limit	Auto

1.1. Robots must fit within a rigid measurement box of the specified category before the match.

1.2. Any brand or type of **microcontroller or wheeled platform** is allowed.

1.3. Robots can be **pre-built or assembled on-site**.

1.4. **Power Source:** Robots must be **battery-powered only** and self-contained. No external power lines are permitted.

1.5. **Expansion Rule:**

- 500g and 1kg Auto categories may **expand** only after a **5-second delay** following the referee's signal.
- RC robots may expand **immediately after the whistle**.
- Expansion must **not detach any part** or cause separate modules. The robot must remain **one solid unit** throughout the match.

1.6. Robots must protect sensors and electronics from light interference and wireless

disruption.

1.7. For RC Sumobots, control must be **wireless** (Bluetooth, 2.4 GHz, or Wi-Fi).

Referees are not responsible for any signal interference.

1.8. **Sensor use for RC category** is prohibited. If sensors are built-in, they must be disabled or covered with opaque tape.

2. ROBOT RESTRICTIONS

2.1. Prohibited Devices:

- Jamming devices (e.g., IR LEDs meant to blind or saturate sensors).
- Reflective surfaces meant to confuse distance or line sensors.
- Liquids, powders, flames, compressed air, or suction mechanisms.
- Magnets, glue, or sticky substances to grip the surface.
- Projectiles, saw blades, or any weaponized components.

2.2. Allowed Materials:

- 500g and 1kg robots must use **dull, non-reflective paint** (preferably matte black for scoop/wedge).
- 3kg category rules on magnets **do not apply** here.

2.3. Safety:

- Robots must not damage the arena or surroundings.
- Sharp edges must be taped or blunted by referees if unsafe.
- Moving parts must not risk injury to participants.

3. ARENA SPECIFICATIONS

Feature	Specification
Shape	Circular ("Dohyo")
Material	500g – Wood; 1kg – Wood or Metal
Diameter	120-154 cm
Border	5 cm white boundary
Surface	Smooth, matte black finish (non-glossy)
Shikiri Lines	Two parallel white lines, 2×20 cm, 20 cm apart at center
Elevation	May be raised up to 5 cm from floor
Lighting	Even illumination, no direct glare or shadows

3.1. Robots detect edges using sensors; hence **clean surfaces** are required before each match.

3.2. No foreign debris or reflective tape is allowed on or near the ring.

3.3. Audience and coaches must stay at least **1 meter** from the ring.

4. GAME FORMAT AND PROCEDURES

4.1. Robot Quarantine

- All robots undergo **pre-match inspection** for weight, dimension, and safety compliance.
- Robots must have charged batteries and uploaded code prior to quarantine.
- Once quarantine begins, **no reprogramming or hardware changes** are allowed.

4.2. Placement of Robots

1. Placement order decided by **coin toss** for the first round.

2. Player A places first; Player B places second while the first observes.
3. Adjustments after placement are not allowed without referee approval.
4. For succeeding rounds:
 - Winner of previous round places first.
 - In case of draw, placement order from the last round is followed.
5. For **Auto Sumobots**, players must stand **at least 1 meter away** once the match begins.

4.3. Start of the Match

Control Type	Start Signal	Robot Behavior
RC (500g)	Referee whistle	Immediate manual control
Auto (1kg)	Referee whistle → 5-second delay	Robot must move automatically after delay

- No physical contact with robots is allowed after signal.
- If a robot moves before the 5-second delay, opponent gains 1 Yuhkoh point.
- Each match consists of **3 rounds, 1 minute each**.
- No reprogramming, repairs, or battery change mid-match.

5. SCORING SYSTEM

Condition	Result / Action
Opponent pushed out of ring	1 Yuhkoh point
Opponent immobile for 5 seconds	1 Yuhkoh point
Robot moves before start signal	Point to opponent
Robot loses part (except small nuts/screws)	Point to opponent
Player touches any robot or arena	Point to opponent
Both immobile / no movement for 5 seconds	Draw
Both fall out simultaneously	Draw
After 3 rounds, no winner	4th round replay – lighter robot wins

Victory Conditions:

- The first robot to earn **two Yuhkoh points** wins the match.
- If no winner after three rounds, a **final round (sudden death)** determines the winner.

6. FALSE START, TIMEOUTS, AND DRAWS

6.1. False Start (Auto Only)

- Declared if the robot fails to start within 5 seconds after the referee's signal.
- Player must immediately call "FALSE START!" and retrieve the robot.
- False start must be called within 5 seconds.
- Two consecutive false starts = automatic **loss of the round**.

6.2. Timeout

- One (1) timeout (max 1 minute) allowed per match.
- Timeout may be used for minor repairs or cooling.
- Not allowed during timeout:
 - Reprogramming
 - Battery replacement
 - Adding/removing parts
 - Soldering components
- Failure to resume after 1 minute = **loss of round**.

6.3. Draw

A round is declared a **draw** if:

- 60 seconds pass with no clear winner.
- Both robots exit the ring simultaneously.
- Referee cannot determine who exited first.
- Both robots lock in deadlock for more than 5 seconds.

7. OBJECTIONS AND APPEALS

1. Only players may raise objections – **coaches are prohibited**.
2. Player must verbally say **"I OBJECT!"** immediately after the round.
3. A table judge will convene with the referee and both players.
4. Objection must be resolved within **60 seconds**; the **judge's decision is final**.

8. SAFETY AND CONDUCT

- Robots must be designed with **safety-first principles**.
- Teams exhibiting **unsportsmanlike conduct** (taunting, shouting, tampering) may be warned or disqualified.
- **Second offense** results in permanent suspension for the event.
- All team members must wear **school ID and safety tags** inside the arena zone.

9. MATCH MANAGEMENT

Role	Responsibility
Referee	Signals start/end, validates points
Table Judge	Handles objections and disputes
Technical Team	Inspects and verifies robot specs
Secretariat	Records and posts official results

All referees and judges must submit **signed score sheets** to the Secretariat after every match.

10. SAMPLE MATCH FLOW

Step	Action	Remarks
1	Robot Inspection	Weight and safety check
2	Coin Toss	Determines initial placement order
3	Placement	Both robots placed at Shikiri lines
4	Referee Whistle	Start signal given
5	5-second delay	Auto robots begin movement
6	Match Duration	1 minute per round
7	Scoring	1 point per valid Yuhkoh
8	Timeout (optional)	Max 1 minute repair
9	Match End	2 Yuhkoh = win
10	Judge Decision	Final ruling and sheet signing

B. LINE TRACING (Beginner & Intermediate)

Event Type: 1 Robot per Team (1–2 Players)

Control Mode: Fully Autonomous

Objective:

Each robot must follow a continuous black line from the **START** to the **FINISH** zone as quickly and accurately as possible. The challenge tests the robot's **sensor calibration**, **algorithm efficiency**, and **mechanical stability** under time pressure.

1. ROBOT SPECIFICATIONS

Category	Maximum Sensors	Maximum Size (L×W)	Height Limit	Weight Limit
Beginner	4 line sensors	20 × 20 cm	No limit	No limit
Intermediate	8 line sensors	20 × 20 cm	No limit	No limit

1.1 Autonomy Requirement

- Robots must be **completely autonomous**; any form of remote control, Bluetooth, or tethered connection is **strictly prohibited**.
- The robot must start, follow the line, and finish **without human intervention** once activated.

1.2 Allowed Components

- Any **microcontroller platform** (Arduino, ESP32, Makeblock, Raspberry Pi Pico, etc.).
- Motors:** DC, geared, or servo motors permitted.
- Sensors:** Infrared (IR), photoresistor, reflective optical, or color sensors.
- Power:** Rechargeable or dry-cell batteries only (max 12 V).
- Chassis:** Any rigid non-metallic material (preferably acrylic or plastic).

1.3 Mechanical Restrictions

- Robot must not use suction, magnets, or adhesive traction.
- Sharp edges and moving parts must be covered for safety.
- Robots must not damage, scratch, or leave marks on the tarpaulin field.

1.4 Identification & Inspection

- Each robot must display a visible Team ID label (3 × 5 cm).
- Before competition, the robot is inspected for dimensions, sensor count, and autonomy compliance.
- Re-inspection may be conducted if a violation is suspected (e.g., hidden wireless modules).

2. FIELD SETUP

Feature	Specification
Field Size	2.4 m × 4.0 m tarpaulin mat (13 oz minimum thickness)
Surface Color	White matte finish (non-glossy side)
Line Color	Black (CMYK 0,0,0,100) matte paint or print
Line Width	25–30 mm uniform throughout course
Start/Finish Zones	Clearly marked 10 cm wide rectangles
Lighting	Ambient light 300–500 lux; no direct glare or shadows
Environment	Indoor venue with flat and stable surface

2.1 Beginner Course

- Simple loop track with **straight and curved paths only**.
- No ramps, intersections, or broken lines.
- Total track length approx. 6–8 m.

2.2 Intermediate Course

- Complex track with **intersections, branches, and optional ramps (10–15°)**.
- May include **humps (2–3 cm height)** to test balance.
- Contains an optional **white auxiliary line** that provides a –10 s bonus if followed continuously.
- Total track length approx. 8–10 m.

2.3 Track Conditions

- Robots must remain on the black line for the entire run.
- Crossing into the white surface or losing the line for more than 3 seconds renders the run invalid.
- Any foreign objects (e.g., dust, oil, or tape marks) must be removed before each run.

3. GAME FORMAT AND PROCEDURES

3.1 Team Runs

- Each team is allowed **two (2) official runs**.
- The robot may be re-aligned or restarted between runs but cannot be reprogrammed or re-wired.
- The **best valid time** of the two runs is used for ranking.

3.2 Starting Procedure

1. The referee confirms robot placement at the START zone.
2. The referee gives the command “Ready... Go!” to start the run.
3. The timer begins when the first part of the robot crosses the start line.
4. The timer stops when any part of the robot crosses the finish line.
5. The robot must come to a complete stop within the finish zone to qualify.

3.3 Invalid Runs

A run is declared invalid if:

- The robot is touched by anyone after "Go!".
- The robot leaves the track entirely or fails to finish within 3 minutes.
- The robot skips a section of the track (e.g., crosses white area to shortcut).
- The robot interferes with the field materials (tape damage, line peeling, etc.).

3.4 Tie-Breakers

If two teams record identical final times:

1. The team with the better second run time wins.
2. If still tied, the team with the **fewer sensors** wins.
3. If still tied, the lighter robot wins.

4. SCORING SYSTEM

Criteria	Description	Points
Fastest Time	Best recorded run of two attempts (valid finish)	70 pts
Accuracy & Stability	Smooth motion, consistent speed, no zigzag or stalling	20 pts
Design & Code Efficiency	Neat wiring, organized layout, logical PID or threshold code	10 pts
Total Maximum Score		100 pts

4.1 Bonus Deductions (Time Advantages)

Category	Bonus Condition	Deduction
Beginner	Used 3 sensors only	-5 seconds
Beginner	Used 2 sensors only	-10 seconds
Intermediate	Completed optional white line path	-10 seconds

4.2 Penalty Additions (Time Disadvantages)

- Robot touch or human intervention = +5 seconds.
- Leaving the line for > 3 seconds = run invalid.
- Damaging the field = disqualification.

4.3 Ranking

Teams are ranked according to their final adjusted time (fastest wins).

If the top three teams record identical times after bonuses, the judging panel may consider the accuracy and stability score as the deciding factor.

5. SAFETY AND CONDUCT

- All participants must wear their school ID and follow venue safety protocols.
- Only referees and judges are allowed inside the competition field during a run.
- Tampering with the course or opponent robots results in immediate disqualification.
- Any form of **intentional delay** (e.g., stalling before the start) is not allowed.
- Unsportsmanlike behavior will result in warning or event ban.

6. EQUIPMENT AND TIMING REQUIREMENTS

Equipment	Description
Digital Timer / Stopwatch	Must record to 0.01 seconds accuracy
Field Ruler	For verifying dimensions and placement
Inspection Scale	Electronic weighing scale (0.1 g accuracy)
Lighting Meter	Used to ensure consistent illumination (300–500 lux)
Referee Flags / Whistle	Used for official start and stop signals

7. COMMON VIOLATIONS AND PENALTIES

Violation	Penalty
Touching robot during run	Run invalid
Reprogramming between runs	Warning / possible disqualification
Using more than allowed sensors	10 sec penalty per extra sensor
Robot damaging tarpaulin field	Immediate disqualification
Refusing to comply with referee	Team forfeits match

8. MATCH OFFICIALS AND DUTIES

Role	Function
Referee	Supervises start/stop of runs and enforces rules
Timekeeper	Logs official run times and validates bonuses
Judge	Scores design, accuracy, and behavior criteria
Technical Team	Inspects robots and field conditions
Secretariat	Consolidates final scores and announces rankings

VI. PENALTIES AND DISQUALIFICATION

- Touching robot during run = forfeit of round
- Intentional damage or interference = disqualification
- Two warnings = suspension for event
- Unsportsmanlike behavior = disqualification of team and coach

VII. AWARDS AND RECOGNITION

- Champion, 1st Runner-Up, 2nd Runner-Up per category
- Special Awards:
 - Best in Programming Logic
 - Best in Robot Design
 - Best in Innovation
 - Sportsmanship Award

VIII. EVENT PROGRAM FLOW

Time	Activity
7:00 AM	Registration / Robot Inspection
8:00 AM	Opening Program
8:30 AM	Start of Competitions (Practice & Runs)
12:00 NN	Lunch Break
1:00 PM	Finals & Judging
4:30 PM	Awarding & Closing Ceremony
5:00 PM	End of Event

IX. MANAGEMENT AND JUDGING PANEL

- **Overall Coordinators:**
USTP Project Leader – *Helen Grace B. Gonzales*
DepEd Division SGOD and CID Representatives
- **Technical Partners:**
USTP College of Technology
- **Judges:**
Industry Practitioners and USTP Faculty
- **Referees:**
USTP Student Volunteers and DepEd TWG
- **Secretariat:**
DepEd TWG and USTP Volunteers

X. ANNEXES

Annex A: Arena Specifications (Sumobot, Line Tracing)

Annex B: Scoring Sheets and Time Logs

Annex C: Sample Field Layouts (to be released 1 week before competition)

ANNEX B – SCORING SHEETS AND TIME LOGS

ROBOLIKHA Cagayan de Oro Division Robotics Competition 2025

Venue: Cagayan de Oro National High School – Junior High School

Date: October 30, 2025

Guidelines for Use:

1. All judges and referees must sign each sheet before submission.
2. Original copies go to DepEd Division TWG; photocopies to USTP Secretariat.
3. Time logs must be verified by two officials before ranking is finalized.
4. Tie-breakers follow official NRC-based procedures stated in the Rulebook.
5. All forms must be signed, dated, and endorsed by the Event Coordinator.

A. SUMOBOT SCORE SHEET

(500 g Beginner and 1 kg Intermediate Categories)

Event Name: ☐ 500g ☐ 1 kg	Match No.: _____	Round: ☐ 1 ☐ 2 ☐ 3
Team A (School):	Robot Name:	
Team B (School):	Robot Name:	

Round Summary:

Round	Start Time	End Time	Winner (Yuhkoh Point)	Remarks (Foul / Immobilized / Out of Ring)

Final Result:

☐ Team A Wins ☐ Team B Wins	Total Yuhkoh Points: _____ Duration: _____ sec
Referee:	Judge:

Referee's Notes:

Technical Remarks:

Scoring and Validation Criteria

Condition	Result / Action
Opponent pushed out of ring	1 Yuhkoh point
Opponent immobile >5s	1 Yuhkoh point
Robot moves early	Point to opponent
Robot loses part	Point to opponent
Both immobile / Draw	Replay 4th round; lighter robot wins

Match Duration: 1 minute per round

Best of 3 Rounds Wins the Match

Timeouts and Violations

Type	Maximum Allowed	Remarks
Timeout	1 (1 minute max)	No reprogramming or battery replacement
False Start	2 consecutive	2nd = automatic loss
Objection	1 per round	Must be declared verbally ("I OBJECT!")

B. LINE TRACING TIME LOG SHEET

(Beginner – Max 4 Sensors / Intermediate – Max 8 Sensors)

Team Name / School:	Category: ☐ Beginner ☐ Intermediate
Robot Name:	Referee:

Run Log:

Run No.	Start Time	Finish Time	Total Time (sec)	Penalties (+sec)	Bonuses (-sec)	Final Time (sec)	Valid Run? (Y/N)

Scoring and Adjustments:

Criteria	Description	Points
Fastest Time	Best valid run of two attempts	70
Accuracy & Stability	Smooth tracing, consistent speed	20
Design & Code Efficiency	Neat wiring and logical algorithm	10
Total Score		100

Final Computation:

Best Run (Shorter Final Time): _____

Rank: _____

Referee Initials: _____

Judge's Notes: _____

C. TECHNICAL INSPECTION CHECKLIST

Inspection Item	Compliant (Y/N)	Remarks
1. Weight within limit		
2. Dimensions within limit		
3. Battery securely installed		
4. No loose parts / sharp edges		
5. Microcontroller powers on properly		
6. Code ready (no modifications post-inspection)		
7. Team ID visible on robot		
8. Safety verified for operation		

Inspected By: _____ Date/Time: _____ Signature: _____

D. OFFICIAL RANK SUMMARY SHEET

[illegible]