



Republic of the Philippines
Department of Education
Region III
SCHOOLS DIVISION OF BULACAN

November 13, 2023

DIVISION MEMORANDUM

No. 482, s. 2023

**DIVISION TRAINING ON ENHANCING SPECIAL CURRICULAR PROGRAMS
THROUGH ROBOTICS TOWARD EDUCATION 4.0**

To: Division Chiefs
All Public Schools District Supervisors
All Public Secondary School Heads
All Others Concerned

1. The Schools Division of Bulacan announces the conduct of the Division Training on Enhancing Special Curricular Programs through Robotics Toward Education 4.0. on December 5-7, 2023 at Casa Cirila Pavilion and Resort, Bulihan, Plaridel, Bulacan.
2. Aligned with Education 4.0 or the Fourth Industrial Revolution (FIRE 4.0) that focuses on transforming the future of education through advanced technology and automation, this Division training-workshop aims to orient, familiarize, and capacitate participants on the:
 - a. go-to STEAM learning tool for learners of the Special Curricular Program;
 - b. basics of building and programming autonomous robots using sensors; and,
 - c. creation of lesson exemplars and session guides that incorporate robotics in learning computer science, basic electronics, and ICT programming.
3. The participants in this training-workshop are 33 Public Schools District Supervisors, 20 school principals of STE-implementing schools, 30 SSES teachers, 20 STE teachers, and 45 SHS TVL-ICT Programming teachers.
4. Meals and accommodation shall be charged to Division INSET Funds while transportation and incidental expenses of the participants shall be charged to their school's Maintenance and Other Operating Expenses (MOOE) and local funds subject to the usual accounting and auditing rules and regulations.
5. This Memorandum serves as the travel order of the participants. Attached is the activity matrix and list of the management team and participants.
6. Wide and immediate dissemination of this memorandum is earnestly desired.


NORMA P. ESTEBAN, EdD, CESO V
Schools Division Superintendent



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Enclosure No. 1 of DM no. 482, s. 2023

TRAINING MATRIX

Day 1 (December 5, 2023)

7:30 – 8:00	Arrival/Registration/	TWG
8:00 – 8:45	Opening Program	TWG
8:45 – 10:00	Session 1	Learning Facilitators and Speakers
	I. Introduction to Robotics	
	a. Basic Definition	
	b. Input-Process-Output	
	c. Brands	
	d. Application of Robotics in STE, TVL/ICT	
10:00 – 10:30	Health Break	
10:30 – 12:00	Session 2	Learning Facilitators and Speakers
	II. IPO Model in Robotics	
	a. Sensors	
	b. Micro-Controller	
	c. Actuators	
12:00 – 1:00	Lunch Break	
1:00 – 2:30	Session 3	Learning Facilitators and Speakers
	III. Basic Electronics	
	a. Circuits	
	b. Electronic Components Common in Robotics	
2:30 – 3:00	Health Break	
3:00 – 5:00	Session 4:	Learning Facilitators and Speakers
	c. Common Tools Used in Electronics	
	d. Hands-on Activity on Basic Electronics	

Day 2 (December 6, 2023)

7:30 – 8:00	Arrival/Registration/	TWG
8:00 – 8:30	Management of Learning (MOL)	TWG/Participation
8:30 – 10:00	Session 5	Learning Facilitators and Speakers
	IV. Basic Coding	
	a. Algorithm	
	b. Creation of Algorithm (Flow Chart)	
10:00 – 10:30	Health Break	
10:30 – 12:00	Session 6	Learning Facilitators and Speakers
	c. Programming Language	
	▪ Examples and Uses	



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▪ Block
Programming

12:00 – 1:00	Lunch Break	
1:00 – 2:30	Session 7: Hands-On Activity	Participants
2:30 – 3:00	Health Break	
3:00 – 5:00	Session 8: Workshop/Crafting of Lesson Exemplars, Activity Sheets, and Session Guide using Arduino Robotics kit	Participants

Day 3 (December 7, 2023)

7:30 – 8:00	Arrival/Registration/	TWG
8:00 – 10:00	Benchmarking	Dr. Yanga's College Inc.
10:00 – 10:30	Health Break	
10:30 – 12:00	Presentation of STE Outputs	Participants
12:00 – 1:00	Lunch Break	
1:00 – 2:30	Presentation of TVL-ICT Outputs	Participants
2:30 – 3:00	Health Break	
3:00 – 5:00	Critiquing	Participants
	Awarding of Certificates and Closing Program	TWG



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List of Management Team and Participants

Over-all Program Managers

1. Cecilia E. Valderama, PhD Assistant Schools Division Superintendent

Assistant Program Managers

1. Gregorio C. Quinto, Jr. EdD CID Chief

Training Managers

1. Joel I. Vasallo, PhD Proponent
2. Marinella T. Pengson, PhD Co-Proponent

Resource Speakers

1. Nica Marie B. Magisa HT3-Parada NHS
2. Jasper D. Alberto Instructor, Dr. Yanga's CI
3. Maria Nimfa M. Concepcion T3-AFGBMTS
4. Espy S. Balbuena AFGBMTS
5. Speaker 1 FELTA
6. Speaker 2 Rex

Technical Working Group

1. Miriam H. Roldan (HT3-FVRNHS)
2. Ryan R. Bautista (HT3-Parada NHS)
3. Patrick Henry Eusebio (T2- Dr. Felipe DJHS)
4. School Health and Nutrition (2 pax) (SDO Bulacan)
5. Bernardino S. Facun (Principal-Sapang Bulac HS)

Public Schools District Supervisor

1. Priscilla SM. Navarro, EdD Bulakan
2. Calumpit North
3. Alexander C. Cruz, PhD Calumpit South
4. Alexander I. Adonis, PhD Hagonoy East
5. Anne P. Castillo, PhD Hagonoy West
6. Paul J. Candelaria Paombong
7. William C. Ortega Pulilan
8. Jennifer E. Quinto, PhD Baliwag North
9. Irene L. Elizalde, EdD Baliwag South
10. Racquel D. Salazar Bustos
11. Dulce Regina C. Flores, PhD Plaridel
12. Carlito G. Dela Cruz, EdD DRT
13. Anna-Liza M. Villanueva, EdD San Ildefonso North
14. Daniel V. Ortega, EdD San Ildefonso South
15. Rafael Rubio, PhD San Miguel Central
16. Guillermo J. Flores, EdD San Miguel North
17. Edelmira S. Dorega, PhD San Miguel South
18. Marisa V. Ortega San Rafael East
19. Ma. Nina P. Avendano, PhD San Rafael West
20. Gilbert M. Agapito Marilao North



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21. Maximo C. Herrera, PhD	Marilao South
22. Anabell R. Palomo, PhD	Obando
23. Lorelina G. Sierra, EdD	Balagtas
24. Jonar C. David, EdD	Bocaue
25. Ma. Neriza F. Fanuncio, EdD	Guiguinto
26. Teresita B. Alquiza, PhD	Pandi North
27. Esperanza F. Perez, EdD	Pandi South
28. Angelita C. Baltazar	Angat
29. Priscilla P. Ilizcupidez, PhD	Norzagaray East
30. Nora G. Manalo, PhD	Norzagaray West
31. Marilou V. Cruz, PhD	Sta. Maria Central
32. Leonora V. Bergado, EdD	Sta. Maria East
33. Cecilia P. Buenaventura, EdD	Sta. Maria West

School Head

1. Cesar V. Valondo	Carlos F. Gonzales HS
2. Rosauro A. Villanueva, PhD	Prenza NHS
3. Ernesto P. Dizon, PhD	San Miguel National HS
4. Jaypee DS. Armenion	Aguinaldo J. Santos NHS
5. Marciano V. Cruz, Jr.	AFG Bernardino MTS
6. Lolita S. Valerio	Alexis G. Santos NHS
7. Marissa D. Hermogenes	Bajet-Castillo HS
8. Roman M. Carreon	Balagtas Agricultural HS
9. Jesie L. Borja, PhD	Bunsuran NHS
10. Evangelina S. Cristobal	Calumpit NHS
11. Ma. Regina M. Lopez	Dr. Felipe De Jesus NHS
12. Reynaldo S. Cristobal	Fortunato F. Halili National AS
13. Erwin John F. Santos, CESE	Mariano Ponce NHS
14. Ceanceno M. Espiritu, Jr., PhD	Norzagaray NHS
15. Neri L. Dizon	Obando NHS
16. Aldwin C. Trinidad	Pres. Diosdado Macapagal MHS
17. Marissa O. Ramos	Pulong Buhangin NHS
18. Rosalina DC. Amper, PhD	San Ildefonso NHS
19. Loida G. Rillera	San Roque NHS
20. Rizaldy C. Pidlaoan	Parada NHS

SSES Participants

1. Ruby A. Angeles	Guiguinto Central School
2. FAYE A. GERONIMO-	Obando Central School
3. Griselle Marie Kathrina P. Samson	Baliwag North Central
4. Maria Theresa Godoy	Balagtas Central School
5. May Cruz	Maguinao E/S, San Rafael West
6. Paolo S. Yumul	San Rafael Central, San Rafael East
7. Pamela Dianne Y. De Arce	Sta. Maria East District
8. Bernardita Gonzales	TPMES Norzagaray East
9. Maileen L. Cruz	Sta. Maria Central
10. Dan Carlo R. San Pedro	Matias A. Fernando MS- Angat
11. Charmaine I. Flores	Baliwag South CS
12. Mariel S. Landayan	Gen Grogorio Del Pilar IS, Bulakan
13. Rolly O. Sito	Cornelia MDJ, MCS - Sta Maria West



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14. Carmela Torio	Plaridel ES Plaridel District
15. Marian R. Parairo	Pinaod CS San Ildefonso South
16. Joseph S. Bareng, PhD	San Miguel South
17. Mary Grace Santiago,	Pulilan Central School
18. Hazel J. Puno,	Paombong Central School
19. Raymond P. Carretero,	Prenza ES / Marilao North District
20. Alma C. Pascual	Hagonoy East Central School,
21. Rowena Martin	Cong. Erasmo R Cruz MCS, Bocaue
22. Rhea V. Ople	Calumpit North.
23. Camille V. Bartolome	Bustos District
24. Marie Minh E. Gramata	Calumpit Central School
25. Raquel B. Cutanda	San Ildefonso ES
26. Josephine B. Nicolas	San Miguel North Central School
27. Prescilla A. Regis	Norzagaray E/S
28. Ma. Mardy V. Valderama	Bunsuran ES Pandi South District
29. Aurea SP. Hernan	Bayabas ES, DRT
30. Sofia G. Zafra	Francisco F. Illescas ES/ Angat

STE Participants

1. Djemnahlie C. Serrano	Carlos F. Gonzales HS
2. Phoebe Grace B. Biol	Prenza NHS
3. Carla Jean P. Pangilinan	San Miguel National HS
4. Corazon U. Apoderado	San Miguel National HS
5. Mary Jean M. Santos	Aguinaldo J. Santos NHS
6. Sherie May B. Martin	AFG Bernardino MTS
7. Efren R. Castillo	Alexis G. Santos NHS
8. Jaehadd Lou A. Untalan	Bajet-Castillo HS
9. Ma. Lourdes C. Feliciano	Balagtas Agricultural HS
10. Conrad Populi	Bunsuran NHS
11. Carol F. Nabong	Calumpit NHS
12. Patrick Henry DG. Eusebio	Dr. Felipe De Jesus NHS
13. Esperanza H. Policarpio	Fortunato F. Halili National AS
14. Marlon I. Santiago	Mariano Ponce NHS
15. Beverly P. Bernabe	Norzagaray NHS
16. Gearard S. Bautista	Obando NHS
17. Angelica A. Policarpio	Pulong Buhangin NHS
18. Elizabeth V. Tiglao	San Ildefonso NHS
19. Estrellita C. De Jesus	San Roque NHS
20. Mary Grace Ann G. Cruz	Parada NHS

TLE-ICT Programming Participants

1. Christopher Rey C. San Jose	Carlos F. Gonzales HS
2. Arvee G. Dumlao	Carlos F. Gonzales HS
3. Angeline I. Curioso	San Francisco Xavier HS
4. Mark Carlo DG Lajom	San Rafael NTS
5. Russel Jane Juliano	Baliuag SHS
6. Florinel R. Gatchalian	FFHNAS
7. Angela Nikka B. De Castro	Obando SHS
8. Rosemarie N. Mendoza	Taal HS



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8. Rosemarie N. Mendoza	Taal HS
9. Princess Monte	FC Lipana NHS
10. Alfredo c. Duran Jr.	GNVHS
11. Jose S. Magno	GNVHS-Annex
12. Louie V. Capistrano	Balagtas NAHS
13. Mon Carlo Mangubat	Akle HS
14. Gene Gener	Norzagaray NHS
15. Marco Paolo Victoriano	Calumpit NHS
16. Edison Palceso	Cambaog NHS
17. Jobert S. Santos	San Pedro NHS
18. Joy Anne DC Mendoza	GNVHS
19. Ricardo P. Enriquez Jr.	Pulong Buhangin NHS
20. Lilian L. Barrientos	Ramona S. Trillana HS
21. Consolacion M. Manalo	Ramona Trillana HS
22. Solly Rose Saguinsin	Ramona S. Trillana HS
23. Rica Delos Santos	AFGBMTS
24. Emerito Gatchalian	Balagtas NAHS
25. Catherine V. Sarmiento	PDDMMHS
26. Aldrin L. Aquino	Dr. Pablito V. Mendoza Sr. HS
27. Romano T, Lopez Jr.	Alexis G. Santos HS
28. Christine R. Primo	Bunsuran NHS
29. Roberto P. Saplad	Bunsuran NHS
30. Jonald Grace Zafra	Carlos F. Gonzales HS
31. Julie D. Quizon	Calumpit NHS
32. Myra Santos	San Gabriel HS
33. Gloria Z. Pumarada	San Ildefonso NHS
34. Karl John F. Del Carmen	Gabihan HS
35. Ryan C. Pilueta	San Rafael NTS
36. Alejandro D. Ricardo Jr.	Sapang Bulac HS
37. Rhosette V. Cruz	Lydia D. Villangca NTS
38. Restituto B. Flores	FC Lipana NHS
39. Phoebe Grace D. Biol	Prenza NHS
40. Rolando B. Lavarias	Pulong Buhangin NHS
41. Reynalyn Centeno	Aguinaldo J. Santos MHS
42. Keith Richard R. Hernandez	Balagtas NAHS
43. Elmar T. Legaspi	Vedasto R. Santiago HS
44. Ivy C. Concepcion	Balagtas NAHS-Annex
45. Zernan Temporal	Taal High School