

Skill name		Mark
Mobile Robotics		
Criteria		Mark
A	Work Organization & Management	10.00
B	Communication and Interpersonal skills	10.00
C	Design	25.00
D	Fabrication & Assembly	5.00
E	Core Programming, Testing & Adjustment	20.00
F	Performance Review and Commission	30.00
G		
H		
I		

Sub Criteria ID	Sub Criteria Name or Description	Aspect Type M = Meas J = Judg	Aspect - Description	Judg Score
A1	Co-operative Behaviour with Compatriot Team Member on C1	M	Co-operative Behaviour with Compatriot Team Member on C1	
		M	Co-operative Behaviour with Compatriot Team Member on C2	
		M	Co-operative Behaviour with Compatriot Team Member on C3	
		M	Co-operative Behaviour with Compatriot Team Member on C4	
A2	Team Space Condition	J	Team Space Condition on C1	0 1 2 3
		J	Team Space Condition on C2	0 1

		J	Team Space Condition on C3	2 3
		J	Team Space Condition on C4	0 1 2 3
A3	Time Management	M	Adherance to schedules on C1	
		M	Adherance to schedules on C2	
		M	Adherance to schedules on C3	
		M	Adherance to schedules on C4	
A4	Robot Assembly C1	M	Competition Robot Assembly / Build is completed On Time	
Sub Criteria ID	Sub Criteria Name or Description	Aspect Type M = Meas J = Judg	Aspect - Description	Judg Score
B1	Communication and Interpersonal Skills	J	Review of the Engineering Journal Frame / Structural Section	0 1 2 3
B2	Communication and Interpersonal Skills	J	Review of the Engineering Journal Wiring Section	0 1 2 3
B3	Communication and Interpersonal Skills			

B4	Communication and Interpersonal Skills	J	Review of the Engineering Journal Mobility Management Section	0 1 2 3
		J	Review of the Engineering Journal Object Management Section	0 1 2 3
B5	Communication and Interpersonal Skills	J	Review of the Engineering Journal Computer Programming Section	0 1 2 3
Sub Criteria ID	Sub Criteria Name or Description	Aspect Type M = Meas J = Judg	Aspect - Description	Judg Score
C1	Information Gathering Systems Performance	M	A Flat Plate is brought into the Sensor Field and the Robot must	
		M	A Flat Plate with a Black Tape Line on it is brought into the Sensor Field	
		M	A Stripped Ball is brought into the Camera's Field of View and the Robot must	
		M	A Solid Ball is brought into the Camera's Field of View and the Robot must	
		M	A Cue Ball is brought into the Camera's Field of View and the Robot must	
		M	A Black and White Parent Grid Pattern is brought into the Camera's Field of View	
C2	Basic Robot Movement	M	The Robot at least complete a 1 M Forwards movement in the Opposite direction	
		M	The Robot at least complete a 1 M Backwards movement in the Opposite direction	
		M	The Robot at least complete a Full 360 degree rotation while remaining in the Opposite direction	
C3	Object Management System	M	The Robot is placed in a position of the Team's choosing relative to the Opposite direction	
		M	The Robot is placed in a position of the Team's choosing relative to the Opposite direction	
		M	The Robot is placed in a position of the Team's choosing relative to the Opposite direction	

C4	Performance Related Additional Spending	M M M  M M M M	The Robot is placed in a position of the Team's choosing relative The Robot is placed in a position of the Team's choosing relative The Robot is placed in a position of the Team's choosing relative  The Robot Design involves a substantial to excessive additional cost to the client The Robot Design involves a moderate additional cost to the client The Robot Design involves a minimal additional cost to the client The Robot Design involves NO additional cost to the client factor	
Sub Criteria ID	Sub Criteria Name or Description	Aspect Type M = Meas J = Judg	Aspect - Description	Judg Score
D1	Wiring	J	Wiring installation meets Industry Standards for secure / safe installation	0 1 2 3
D2	Robot Frame	J	Frame Assembly meets Industry Standards for fit and alignment	0 1 2 3
D3	Object Management System Structural Elements	J	Object Management System meets Industry Standards for fit and alignment	0 1 2 3

Sub Criteria ID	Sub Criteria Name or Description	Aspect Type M = Meas J = Judg	Aspect - Description	Judg Score
E1	Mobility Management: Safety Light	M	The Robot's operational Safety Light Performance	
E2	Mobility Management: Movement in a Confined Space	M	Robot travels the length of the Reception Area and Exits through the Reception Area	
E3	Mobility Management: Movement in a Confined Space	M	Robot travels the length of the Reception Area and Exits through the Reception Area	
E4	Mobility Management: Movement in an Open Space	M	Robot travel through the Open Playground Floor from the Playground Area	
E5	Mobility Management: Movement in an Open Space	M	Robot travel through the Open Playground Floor from the Playground Area	
E6	Mobility Management: Conducting an Open Space	M	Robot travel through the Open Playground Floor from the Playground Area	
E7	Mobility Management: Conducting an Open Space	M	Robot travel through the Open Playground Floor from the Playground Area	
E8	Mobility Management: Conducting a Sand Area	M	Robot travel through the Open Playground Floor from the Playground Area	
E9	Mobility Management: Conducting a Sand Area	M	Robot travel through the Open Playground Floor from the Playground Area	
E10	Mobility Management: Moving the Robot to Designated Position	M	Robot successfully positions itself in front of THE Designated Position	
E11	Mobility Management: Moving the Robot to Designated Position	M	Robot successfully positions itself in front of THE Designated Position	
Sub Criteria ID	Sub Criteria Name or Description	Aspect Type M = Meas J = Judg	Aspect - Description	Judg Score
F1	Teleoperation Performance Review Test Run 1	M	Total Number of Children the Robot took Possession of	
		M	Total Number of Children that have been Delivered INTO the Reception Area	
		M	Total Number of Children that have been Delivered INTO the CO	
F2	Teleoperation Performance Review Test Run 2			

F3	Teleoperation Performance Review Test Run 3	M M M	Total Number of Children the Robot took Possession of Total Number of Children that have been Delivered INTO the Rec Total Number of Children that have been Delivered INTO the CO	
F4	Autonomous Performance Review Test Run 4	M M M	Total Number of Children the Robot took Possession of Total Number of Children that have been Delivered INTO the Rec Total Number of Children that have been Delivered INTO the CO	
F5	Autonomous Performance Review Test Run 5	M M M	Total Number of Children the Robot took Possession of Total Number of Children that have been Delivered INTO the Rec Total Number of Children that have been Delivered INTO the CO	
F6	Autonomous Performance Review Test Run 6	M M M	Total Number of Children the Robot took Possession of Total Number of Children that have been Delivered INTO the Rec Total Number of Children that have been Delivered INTO the CO	
Sub Criteria ID	Sub Criteria Name or Description	Aspect Type M = Meas J = Judg	Aspect - Description	Judg Score
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Sub Criteria ID	Sub Criteria Name or Description	Aspect Type M = Meas J = Judg	Aspect - Description	Judg Score

Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement or Nominal Size (Measurement Only)	WSSS Section	Max Mark
Mobile Robotics is a Team Competition	0 or 1	1	0.50
Mobile Robotics is a Team Competition	0 or 1	1	0.50
Mobile Robotics is a Team Competition	0 or 1	1	0.50
Mobile Robotics is a Team Competition	0 or 1	1	0.50
Workspace is consistently in a state of disarray: multiple to Workspace is consistently in a moderate state of organiza Workspace is consistently in a good state of organization: Workspace is consistently in an excellent state of organiza		1	1.00
Workspace is consistently in a state of disarray: multiple to Workspace is consistently in a moderate state of organiza		1	1.00

Criterion A      Total Mark      10.00

Workspace is consistently in a good state of organization: Workspace is consistently in an excellent state of organiza		1	1.00
Workspace is consistently in a state of disarray: multiple to Workspace is consistently in a moderate state of organiza Workspace is consistently in a good state of organization: Workspace is consistently in an excellent state of organiza		1	1.00
Workspace is consistently in a state of disarray: multiple to Workspace is consistently in a moderate state of organiza Workspace is consistently in a good state of organization: Workspace is consistently in an excellent state of organiza			
Time management is an on-going requirement. Competitio Time management is an on-going requirement. Competitio Time management is an on-going requirement. Competitio Time management is an on-going requirement. Competitio	0 or 1	1	0.90
		1	0.90
		1	0.90
		1	0.90
Time management is an on-going requirement. Competitio	0 or 1	1	0.40
Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement or Nominal Size (Measurement Only)	WSSS Section	Max Mark
Incoherent content organization, lacking in detail and cont Coherent content organization, adequate in detail and con Very Coherent content organization, more than adequate i Exceptionally Coherent content organization, Superior in d		2	2.00
Incoherent content organization, lacking in detail and cont Coherent content organization, adequate in detail and con Very Coherent content organization, more than adequate i Exceptionally Coherent content organization, Superior in d		2	2.00

Criterion B      Total Mark      10.00

Incoherent content organization, lacking in detail and content Coherent content organization, adequate in detail and content Very Coherent content organization, more than adequate in detail and content Exceptionally Coherent content organization, Superior in detail and content		2	2.00
Incoherent content organization, lacking in detail and content Coherent content organization, adequate in detail and content Very Coherent content organization, more than adequate in detail and content Exceptionally Coherent content organization, Superior in detail and content		2	2.00
Incoherent content organization, lacking in detail and content Coherent content organization, adequate in detail and content Very Coherent content organization, more than adequate in detail and content Exceptionally Coherent content organization, Superior in detail and content		2	2.00
Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement or Nominal Size (Measurement Only)	WSSS Section	Max Mark
Distance Sensor Performance: The Robot Backs Up or performs other task	0 or 1	3	1.00
IR Tape Line Sensor Performance: The Robot Backs Up or performs other task	0 or 1	3	1.00
Camera Recognition of a Stripped Ball: The Robot Backs Up or performs other task	0 or 1	3	1.00
Camera Recognition of a Solid Ball: The Robot Backs Up or performs other task	0 or 1	3	1.00
Camera Recognition of a Cue Ball: The Robot Backs Up or performs other task	0 or 1	3	1.00
Camera Recognition of a Black and White Parent Grid Pattern: The Robot Backs Up or performs other task	0 or 1	3	1.00
Straight Line in a Forward Direction: The Robot moves Forward	0 or 1	3	1.00
Straight Line in a Backwards Direction: The Robot moves Backwards	0 or 1	3	1.00
360 Degree Rotation within a 600 by 600 mm space: The Robot rotates 360 degrees	0 or 1	3	1.00
The Object Management System functioning in Autonomous Mode	0 or 1	3	1.50
Competitors position their Robot in front of a Reception Area	0 or 1	3	1.50
The Object Management System operated by a Competitor	0 or 1	3	1.50

Criterion C Total Mark 25.00

The Object Management System operated by a Competitor	0 or 1	3	1.50
The Object Management System operated by a Competitor	0 or 1	3	1.50
The Object Management System operated by a Competitor	0 or 1	3	1.50
Economy of the Robot Design relative to the Potential End			
ZERO marks awarded if the cost of additional performance	0 or 1	3	1.75
ZERO marks awarded if the cost of additional performance	0 or 1	3	1.75
ZERO marks awarded if the cost of additional performance	0 or 1	3	1.75
ZERO marks awarded if the cost of additional performance	0 or 1	3	1.75
Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement or Nominal Size (Measurement Only)	WSSS Section	Max Mark
Wire placement is poorly organized. Multiple wires are loose		4	2.00
Wire placement is reasonably organized. Minimal wires are loose			
Wire placement is very well organized. No wires are loose			
Wire placement is exceptionally well organized. No wires are loose			
Overall Robot Frame is poorly organized. Multiple structural		4	1.50
Overall Robot Frame is reasonably well organized. A minimum			
Overall Robot Frame is very well organized. No structural			
Overall Robot Frame is exceptionally well organized. No structural			
Overall Object Management System is poorly organized. N		4	1.50
Overall Object Management System is reasonably organiz			
Overall Object Management System is very well organiz			
Overall Object Management System is exceptionally well c			

Criterion D      Total Mark      5.00

Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement or Nominal Size (Measurement Only)	WSSS Section	Max Mark
The Safety Light functionality is observed through a series	0 or 1	5	1.00
The external face of the Reception Area Exit Arch defines	0 or 1	5	1.50
The external face of the Reception Area Exit Arch defines	0 or 1	5	2.00
The Robot's starting position is in the Reception Area Pas	0 or 1	5	1.50
The Robot's starting position is in the Reception Area Pas	0 or 1	5	2.00
The Robot's starting position is in the Reception Area Pas	0 or 1	5	2.00
The Robot's starting position is in the Reception Area Pas	0 or 1	5	2.00
The Robot's starting position is in the Reception Area Pas	0 or 1	5	2.00
The Robot's starting position is in the Reception Area Pas	0 or 1	5	2.00
The Robot starts outside the Reception Area Archway, mo	0 or 1	5	2.00
The Robot starts outside the Reception Area Archway, mo	0 or 1	5	2.00
Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement or Nominal Size (Measurement Only)	WSSS Section	Max Mark
	0 to 5	6	1.50
	0 to 5	6	1.50
	0 to 5	6	2.00

Criterion E    Total Mark    20.00

Criterion F    Total Mark    30.00

0 to 5	6	1.50	
0 to 5	6	1.50	
0 to 5	6	2.00	
0 to 5	6	1.50	
0 to 5	6	1.50	
0 to 5	6	2.00	
0 to 5	6	1.50	
0 to 5	6	1.50	
0 to 5	6	2.00	
0 to 5	6	1.50	
0 to 5	6	1.50	
0 to 5	6	2.00	
0 to 5	6	1.50	
0 to 5	6	1.50	
0 to 5	6	2.00	
Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement or Nominal Size (Measurement Only)	WSSS Section	Max Mark
Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement or Nominal Size (Measurement Only)	WSSS Section	Max Mark

Criterion G Total Mark 0.00

Criterion H Total Mark 0.00

Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement or Nominal Size (Measurement Only)	WSSS Section	Max Mark

Criterion I    Total Mark    0.00

Competition    Total Mark    100.00