

## WRO 2012 OPEN CATEGORY SCORING RUBRIC

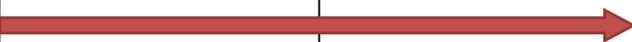
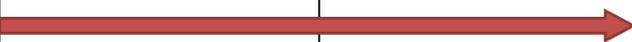
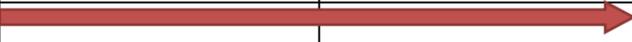
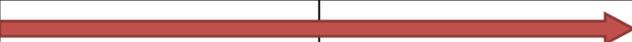
This scoring rubric will be used to judge teams during the WRO 2012 Open Category held in Malaysia. Participants are encouraged to build their Open projects according to the criteria to the best of their abilities.

Participants will be scored by judges in one of the 4 boxes, Pass (average), Merit (good), Excellent (very good), and Distinction (best), for each criteria depending on how well they performed in each.

Do note that all rules, requirements, and regulations under Section F in the General Rules 2012 still applies.

Have fun and good luck!

\* Please print this rubric on A3 paper for best viewing.

CATEGORIES	#	CRITERIA	POINTS				
		Total Points:	50	Pass	Merit	Excellent	Distinction
Project	1	Relevance to Theme This year WRO encourages participants to build projects towards the concept of social robots. A social robot is an autonomous robot that interacts/communicates with humans by following social behaviours/rules attached to its role. How well does the project fit this description?	(15)	Fits the theme loosely.			Fits the theme extremely well.
	2	Creativity & Quality of Solution How original and creative is the project? Does the solution solve the problem well? Does the solution benefit society in a huge way or limited to just a small scope?	(20)	Solution is not very original; does not solve the problem well; does not benefit society in a big way.			Solution is extremely creative; solves the problem extremely well; benefits society extremely significantly.
	3	Research & Report Comprehensive research has been done and solutions are built upon this research.	(10)	Basic report done.			A professional report with comprehensive data, background, analysis, and future research covered in detail.
	4	Entertainment Value The project looks fun, awesome, and has great entertainment value.	(5)	There are very few fun elements.			This is awesome! Show it to me again!
			Total Points:	45	Pass	Merit	Excellent
Programming	1	Automation Routines are fully automated with the use of sensors as opposed to timing.	(15)	Robot is based mostly on timing.			Robot is fully automated.
	2	Good Logic Routines and demonstrations are easily repeatable without hassle.	(15)	Setting up routines depend on human sequencing and manual adjustments; difficult to repeat.			Main routines can be demonstrated independently and instantly; easy to repeat.
	3	Complexity Complex functions are performed with the use of multiple sensors and/or controllers to achieve meaningful outcomes.	(15)	Robot performs simple functions.			Robot performs extremely complex functions and interacts intelligently with its environment.
		Total Points:	45	Pass	Merit	Excellent	Distinction
Engineering Design	1	Technical Understanding Team members are able to produce clear, precise, and convincing explanations about each step of the robot building and programming process.	(15)	Participants are unable to give convincing and clear explanations about their building process.			Participants able to explain and justify all steps of the building process convincingly, clearly showing that they have done their work.
	2	Engineering Concepts Application of engineering knowledge evident such as proper use of gears, levers, and weight transfers.	(10)	Little application of engineering concepts.			Heavy application of engineering concepts.
	3	Mechanical Efficiency Parts are used efficiently. Robot uses the simplest way to achieve its goals and does not look unnecessarily bulky.	(10)	Robot looks overly complicated; there is wastage of parts.			Robot looks lean and displays precise and accurate movements.
	4	Structural Stability Robot is strong, sturdy, and built in line with good engineering principles.	(5)	Weak and simple structure.			Fundamentally strong and sound structure.
	5	Aesthetics Robot has aesthetic appeal.	(5)	Robot looks a little plain.			Robot is visually appealing.
		Total Points:	40	Pass	Merit	Excellent	Distinction
Presentation	1	Successful Demonstration Robot demonstration is successful. Evidence of pre-emptive measures taken to ensure successful demonstration. Clear that a lot of preparation and practice have taken place.	(15)	Several failures evident during robot demonstration.			Zero failures evident during robot demonstration.
	2	Communication & Reasoning Skills Ideas, concepts, and contents conveyed effectively, neatly, and convincingly. Presentation laid out in a logical and interesting fashion.	(10)	Difficult to follow the presentation.			An easy to follow, clear, and interesting presentation.
	3	Quick Thinking Ability of participants to think on their feet and answer the judges' questions convincingly.	(5)	Participants are unable to answer the judges' questions satisfactorily.			Participants are able to answer all the judges' questions well.
	4	Posters and Decorations Amount of additional effort put in to decorate the booth and make it eye-catching.	(5)	Booth is decorated minimally.			Booth is eye catching and decorated well.
	5	Project Video How closely does the actual project match the project video? (0 marks given if video does not meet the video requirements as stated in the general rules).	(5)	Actual demonstration does not match well with project video.			Actual demonstration matches exactly with project video.
		Total Points:	20	Pass	Merit	Excellent	Distinction
Teamwork	1	Unified Learning Outcome Every team member is able to display internalized knowledge about the subject matter of their project.	(10)	Only one member displays some knowledge about the subject matter of their project.			All members display internalized and extended knowledge about the subject matter of their project.
	2	Inclusiveness Appropriate distribution of responsibilities with each member clearly knowledgeable about his or her individual role.	(5)	Majority of the project is shouldered by one member only.			All responsibilities distributed evenly with a good sense of team effort.
	3	Team spirit Team members display positive energy, good cohesiveness, and value one another.	(5)	Team members display ordinary team spirit.			Team members display extraordinary team spirit, energy, and rapport.