2021 Robot Modeling Challenge Score Sheet

Objective: Team modeled virtual robot (100 Pts)

Modeling (60 pts.)			
Design/Importing		**Possible Points**	Points Awarded
21-25	A robot 3D model is accurately represented in Simscape environment (designed from scratch or imported CAD models). Parts that should touch are touching and appear to be in correct location.	**25**	
16-20	A robot 3D model is represented in Simscape environment (designed from scratch or imported CAD models).		
6-15	Multiple parts are represented in Simscape but are not connected.		
0-5	Model is not represented in Mathworks Simscape Multibody.		
Motion		**Possible Points**	Points Awarded
1-20	Ability to move part(s) of the robot (e.g., arm); i.e., movement of a joint	**20**	
0	Unable to demonstrate motion.		
Mobility		**Possible Points**	Points Awarded
1-15	Ability to move the robot across the environment (roll, step, etc.)	**15**	
0	Unable to demonstrate movement across the environment.		
Interaction with Environment (30 pts.)			
Spatial Contact/Collisions		**Possible Points**	Points Awarded
8-15	Ability to move other object(s) with the robot.	**15**	
1-7	Demonstrated spatial contact/collisions with other object(s).		
0	Unable to move other object(s) with the robot.		
Dexterity		**Possible Points**	Points Awarded
7-10	Ability to place object(s) with the robot (object that was picked up, etc.).	**10**	
4-6	Ability to pick up object(s) with the robot.		
0-3	Ability to place/drop object(s) with the robot (object starting on the robot).		
2021 Game Integration – Integration of parts from the 2021 game field into the demonstration.		**Possible Points**	Points Awarded
3-5	Demonstrated spatial contact/collisions with 2021 game parts.	**5**	
0-2	Robot and 2021 game elements coexist in the same simulation model.		
Complexity and Quality (10 pts.)			
Complexity		**Possible Points**	Points Awarded
0-5	_____# of joints where motion is modeled	**5**	
	_____# of separate items where contact/collision is modeled		
	_____# of unique parts modeled		
Quality		**Possible Points**	Points Awarded
0-5	Judge's discretion on quality, accuracy, and the quality of the demonstration	**5**	
SCORE CALCULATION			
Additional Comments:		**Final Score**	**100 max**

Judge name/number (print) _____

Team Number: _____ School: _____