

Maryam Alabdulhadi – Weiam Abed “Collaborated Work”

3rd Main Task in Mechanical department.

Build and design a Competition robot on Cinema 4D:

Morphological analysis

Main elements	Sections			
Number of Wheels	1	2	3	4
Type of Wheels	Standard/Fixed wheel	Ball wheel	Omni wheels	Tank wheels “Belt wheels”
Type of motor	DC	Stepper	Servo	Brushless
Number of arms	1	2	3	4
Base Material	Wooden	Plastic	Aluminum	glass
Shape of motor box	Half Circle	Rectangle	Pyramids	Square Cube
Type of weapon	Long Needle	Knife	Laser	Nail Thrower
Position of the motor box	Below	Above	In the middle	On the edge

Our choices are the following:

Number of Wheels: 4

Type of Wheels: Standard/Fixed wheel

Type of motor: Brushless

Number of arms: 1

Base Material: Wood

Shape of motor box: Rectangle

Type of weapon: Knife

Position of the motor box: Below, In the middle

Reason:

For a starting point, the main reason of choosing 4 wheels is that we think that is the most capable choice when it comes to fighting robots and rough environment to help it stand still, then for the type of wheels it will be the standard type since it does the job, cheap and accessible to us. For the motor, we will be applying Brushless motor because it has significantly higher efficiency and performance which is what we need for this type of robots. In addition, we will be applying one arm since it is enough for holding the weapon, we chose which is the knife. Now talking about the base, it will be a wooden base rectangle shaped including a motor box below it in the middle so the arm can move more freely which will affect our robot performance positively.