

West Side Robotics  
LEGO JOUSTING RULES

Goal:

- The goal of Lego Jousting is for a Lego Mindstorms Robot (RCX, NXT or EV3) to knock a “Knight” (Lego Minifigure) off its platform on the opponent robot. We realize that there are many variations to the rules for Lego Robot Jousting; these will be the rules for this tournament and we ask that entrants read and be familiar with this particular rule set at the time of the tournament, in order to avoid surprises.

Team:

- A “team” is comprised of one or more students who have built a robot for this event. Each team should also have one adult present with the team.
- The robot must be an autonomous robot they have constructed themselves prior to the tournament to the specifications below. This event is not a workshop where you may build robots after arrival. There will be limited time for changes or adjustments to the robots or their programming during the event. (There is a FREE workshop for help building and programming the robots in the morning prior to the event. See the website for more information on this workshop.)
- Only one team member may enter the jousting arena area to start the robot; other team members may watch from outside the arena area.
- Each team/robot will be assigned a number on check-in and should have a unique name or identity to be easily recognized by spectators and officials when on the field and when scoring.
- (While this is an ideal “off-season” activity for First Lego League teams, entrants DO NOT have to be made up of FLL team members, and this is also an ideal activity for those with an interest in trying Lego robotics for the first time!)

Robot Construction:

- The jousting robot may only be comprised of official Lego parts, which cannot be held together by any means other than the standard Lego construction methods (no tape, glue, stickers, etc.). No homemade sensors, multiplexors, or modifications to Lego elements are allowed. No modification to Lego parts by gluing, cutting or melting is allowed.
- Up to FOUR motors with rotation sensors are allowed, and any other sensors manufactured by Lego may be used. No “made for Lego” third party sensors are permitted for this tournament.
- Teams will use ONLY one standard size LEGO Minifigure of their own providing as the Knight. The Knight’s feet are to be attached to a platform built on the front of the robot: the legs of the Minifigure must move (articulate) separately and may not be one piece or non-movable, and the feet must attach to only two studs on the platform.
- The robot must be constructed with a platform as the most forward element of the robot body. It must be between 7.5 cm and 9 cm from the floor, with the studs pointed upwards. No walls or other protection is allowed. The exposed area of the platform may have a maximum width of 8 Lego studs wide, and must extend in front of the rest of the robot body by a maximum of 6 Lego studs. The Minifigure may be placed anywhere on this 8 stud by 6 stud (max) surface.
- The platform may be reinforced or supported by other Lego elements, but may not be supported on the floor by any element. The maximum thickness of the platform and its supports can be no more than 2 cm at any point.
- The robot must be constructed with a “Lance” which will be an element designed to knock the opponent knight from the platform. It may be motorized or not, and can attach to the robot at any point behind the platform. The Lance must remain attached to the robot at all times. There is no restriction on shape or size. No projectiles or removable parts will be allowed.
- It is encouraged that robots be decorated or themed with Lego parts.
- There will be limited time and space for last minute design improvements and adjustments, however, the robots should be completed at the time of registration, and once check-in takes place, the robot or its programming may no longer be modified. Robot battery should also be sufficiently charged once the robot is checked in.

#### Robot Size:

- The robot body must be of a size that will not cross the center line ("Rail") which will be at the midway between the track lines, which are 25 cm (10") apart, and will be to the left of the robot throughout each pass. Therefore, the left side of the robot may not extend further than about 22 cm from the track line.
- The Lance attachment may be the only part that will extend over the Rail.

#### Programming:

- A line-following program must control your robot's motion. The robot can move only in the forward direction making a pass past the opponent, and must remain moving forward throughout. The speed of forward movement is of your choosing. (It may be beneficial to move more slowly, but the lance + robot speed must move with enough force to remove the Minifigure.) There are many line-following programs that can be used, found from various written and online sources.
- Once started, the robot may not stop moving forward, become stationary or move backward at any time.
- Your Lance may be programmed to move to knock off the opponent's Knight, or may be a passive or mechanical device. The Lance must remain attached to the robot at all times. No projectiles will be allowed.
- The robot must be autonomous. No Bluetooth or other wireless control of the robot on the field is permitted.

#### Robot Restrictions:

- The robot is restricted from destructive action. No liquid, powder, gas, no inflammatory device, no parts to do damage to the arena or opponent, no sharp edges.
- No projectiles or throwing parts are allowed. The Lance must remain attached to the robot at all times.
- Judges will have the discretion to disqualify any robot whose strategy is deemed to be too dangerous.

#### Player Restrictions:

- When teams are called to the jousting arena for their bout, teams are to present to the field promptly, and each team is to greet the other with a bow or handshake.
- Players on are to behave in a respectful manner, and are not permitted to use profanity or insulting words or actions, or to have their robot use such words or actions. Unsportsmanlike behavior will not be tolerated. Such behavior will result in a violation or disqualification at the judge's discretion.
- Only one team member may enter the jousting arena area. Once starting the robot program that team member may no longer touch the robot or the arena until the judge declares the completion of the bout.

#### Jousting Arena:

- For this event, the track will be on a white surface, with two (2) parallel one inch (1") black lines of electrical tape which will be separated by 25 cm. There will be a 1" beam as the "Jousting Rail" halfway between them to prevent the robots from straying into the opponent's space.
- The overall length of the track will be 1.2 meters (about 4 ft).
- The first 15 cm are marked to be the starting position of the track, and the last 15 cm are the marked ending position of the track. The robot may not start with any part beyond that starting position, and may be retrieved when it reaches the marked ending position.
- The area immediately around this arena, termed the "Outer Jousting Arena Area", will be marked with tape or cones. Only one player from each team may enter the Jousting Arena Area with the robot at the start of the match.

#### Start of Match:

- One player from each team will enter the Jousting Arena with the robot and they will greet each other.
- Upon the signal of the judge, the robots will be simultaneously placed at the far left end on their side of the track, within the marked starting position.
- Upon the start command from the judge, the players will start the robot program, and then step back from the Jousting Arena.

#### Match:

- The robots must follow their line in a continuous direction to the right along the line, making a pass past the opponent on the track on the left side of the robot, until the ending position at the right end of the line is reached.
- A robot will receive 1 point for contact of its Lance with the opponent's Platform, or 2 points for contact with the opponent's Knight, or 3 points for knocking the Knight off the Platform.
- Three (3) passes will be allowed to attempt knock the opponent Knight off.
- If a Knight's feet are detached from the studs on the platform but the Knight remains on the platform itself, the Knight is not considered to be off the platform. A Knight which comes off the platform itself and gets caught on the robot does count as off.
- If both Knights stay on their respective platform and no contact is made, neither team receives a point.
- The robots must continue following the line and making a pass until their wheels reach the marked ending position. The robot may not stop moving forward, become stationary or move backward at any time; if it does, the other team receives 1 point.
- With the exception of the Lance attachments neither robot may extend over the midline Rail of the track at any time. If the main body of the robot crosses the midline, it may be disqualified from that pass, and the other team receives 1 point. At the discretion of the judge, the pass may be restarted.
- If parts of the robot or its Lance come off and interfere with the forward movement of the opponent robot, the robot may be disqualified from that pass and the other team receives 1 point. At the discretion of the judge, the pass may be restarted.

#### Judging:

- The Judge will determine the points awarded on each pass, and will award any advantage points for violations, and has the discretion to disqualify any robot or team not meeting the requirements for competition.
- The judge's decision is final, and cannot be disputed once competitors leave the jousting arena.

#### Winner of Match:

- The robot achieving the most points after 3 passes will be declare the winner of the match.

#### Championship:

- The tournament will use the double elimination tournament method.

#### Awards:

- Awards will be presented for champion and runner-up.

#### Flexibility of Rules:

- As long as the concept and fundamentals of these rules are observed, flexibility will be allowed to encompass changes in the number of players or other rules changes as deemed necessary by the judges and officials.