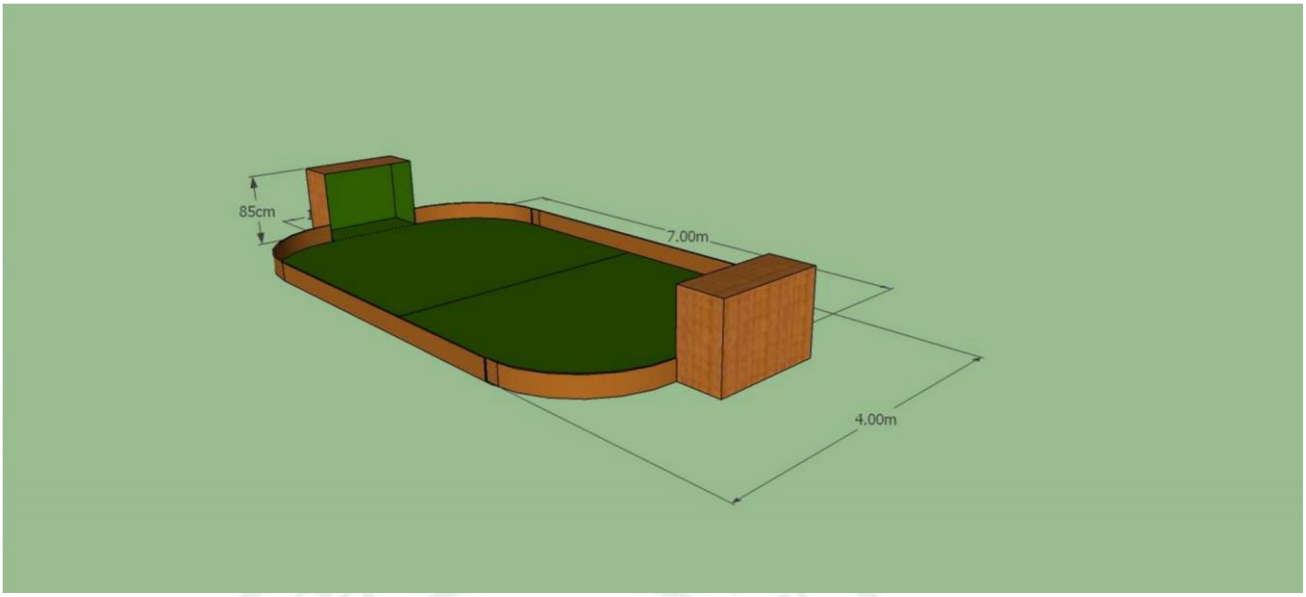
Wild Soccer

General Rules:

- Teams would be divided into groups, each facing a random opponent in a Knock-out match.
- The winning teams from this knock-out round would then enter subsequent rounds of quarterfinals, semifinals and finals.
- Each team can have a maximum of 10 participants.
- A team may consist of students from different colleges.
- Teams will be selected on the basis of the abstract submitted.
- All the participating teams are supposed to submit their final codes used.
- Certificates of Excellence will be awarded to the top three teams.
- The organizers reserve the right to change the rules as they deem fit.
- Referee's decision will be final and binding to all.
- Any team if asked, will have to change its wireless module frequency/coded channel, so as to avoid clashes with the opposite team.
- All the abstracts must be sent at robogames@techkriti.org.
- Only one abstract submission is allowed. In case more than one abstract is received from a team, the latest submission will be considered.
- If you have not been able to submit the abstract by the deadline, contact the managers.

Arena:

- The soccer field size would be 7m x 4m. The goal post will be placed outside the 7m mark.
- Height of goal post will be 0.6m. The ball will be a simple smooth plastic ball with weight in gms (negligible) and diameter 15 cm.
- The width of the goal post is 1.5m. All dimensions are subjected to ±15% change



Gameplay:

- Any team will be disqualified if they are unable to change their wireless module's frequency (if asked to do so).
- A maximum of 3 bots can be inside the arena from any team. Other than these 3, a maximum of 1 bot can be kept as reserve.
- Any team must not block the entire goal post , there should be a space of 20 cm space at all times.
- The team which scores maximum goals in the match would be declared as winner of that match.
- The total playing time between two teams would be of 14 minutes, divided into two have of 7 minutes each.
- Robo wars is also allowed simultaneously (i.e. any bot can fight with any other using any means)
- Goal will be considered only if the ball crosses the goal posts.
- In case of tie during group matches, NO extra time or penalty shootout would be given.
- In case of tie during knock-out matches, firstly extra time of 5 minutes will be given and even after that if there is still a tie then there will be penalty shootout Compensation time will be given on the discretion of referee.
- The break time would be 5 minutes.
- The ball diameter would be 15 cm.
- The ball holding mechanism of the bot should not get the ball more than half of the diameter into the bot.

- Any team lifting and carrying the ball, using adhesive techniques to hold the ball or any other unfair means will be disqualified.
- Any part of the bot should not cross the goal line during complete match. ▸ Wired bot is RESTRICTED to move within the respective half only.
- In case of wired bot, wires must be 1m above from ground.
- A team can have at most two substitute bots in case a bot is damaged.
- Only one substitution is allowed in one half. You can claim to substitute but whether you actually do is on the discretion of the referee.
- Timeouts will be on the discretion of the referee.
- Dead bots are not allowed.
- All bots will be checked at the start of every round that they are moving. In case of any discrepancy, referee will decide that the bot is moving or not.
- At start from center bots should be at least 50cm away from the ball in the center.
- Claiming is allowed but none should stop his game till referee stops the game.

Allowed :

- Hitting OR Kicking OR Thrashing OR Flipping the other bot.
- Completely demolishing any other bot.
- Anything else that you can imagine!!!

Warnings :

- Bot moves before whistle and after the 3, 2, 1 count begins.
- Ball lifted by one bot(w/o touching ground) and other team's bot not touching the ball.
- Touching (any kind of interruption/human intervention) the bot w/o asking referee.
- In case of any discrepancy referee's decisions would be final.

In case of any disputes, the decision of the organisers would be final and binding to all.

Bot Specification:

Dimensions and Weight

- The robot should not be more than 550mm*550mm*650mm(length*breadth*height) in size at any time during gameplay.

- One bot can be of at-most 60 pounds.
- Rest 2 (+1) bots should not be more than 30 pounds in weight.
- Teams have to show and declare ALL of their bots before their first match itself.
- No major changes in the weapon system etc. would be allowed after the above mentioned declaration.

Weapons System

Robots can have any kind of magnetic weapons, cutters, flippers, saws, lifting devices, spinning hammers etc. as weapons along with.

- Use of pneumatics and hydraulics are allowed.
- Pneumatics Robot can use pressurized non-inflammable gases to actuate pneumatic devices. Maximum allowed outlet nozzle pressure is 8 bar.
- Hydraulics Robot can use non-inflammable liquid to actuate hydraulic devices e.g. cylinders.

Following exceptions and limitations

- Liquid projectiles.
- Any kind of inflammable liquid.
- Flame-based weapons.
- Any kind of explosive or intentionally ignited solid or potentially ignitable solid.
- High power magnets or electromagnets.
- Radio jamming, tazers, tesla coils, or any other high-voltage device.
- Tethered or un-tethered projectiles.
- Weapons or defenses that stop combat completely of both (or more) robots.This includes nets, tapes, strings, and other entanglement device.
- Spinning weapons which do not come in contact with the arena at any point of time are allowed.

Mobility

- All robots must have easily visible and controlled mobility in order to compete.
- Flying is not allowed.

Robot control requirement

- Three of the Four robots must be radio controlled.

- Tethered control is not allowed.
- All robot radio systems must have a way to change frequencies or coded channels to prevent radio conflicts (i.e. if you are using 4 frequencies you need to have 2 more alternate frequencies readily available).
- If you are using a home built control system, or a control system not covered here, you must first clear it with the coordinators.
- Toy radio systems are allowed at this event

Batteries and Power

- Each team must have batteries to power their bots.
- The battery will be taken into consideration for the measurement to be made for the machine dimension and the weight.
- The only permitted batteries are ones that cannot spill or spray any of their contents when damaged or inverted.
- The maximum allowed battery voltage is 36 volts. No external power supply will be provided
- Voltage must not exceed 36 volts between any two points.

Spring, Pinning and Lifting

- Any large springs used for drive or weapon power must have a way of loading and actuating the spring remotely under the robots power.
- Any flywheel or similar kinetic energy storing device must not be spinning or storing energy in anyway unless inside the arena or testing area.

Suggested Wireless Modules:

2.4GHz Wireless Module. With a RANGE OF OVER 200M and NO FREQUENCY CLASH, this wireless module can be interfaced to your robot using the below motor driver. The PHOENIX SERIES motor drivers directly interfaces with any 2.4Ghz aircraft control systems, giving you a hassle free control over your robot for a very long distances(>200metres!) and has many channels which can also be used for operating your weapons in combat robot using our WHIPLASH SERIES weapon controllers.

Specifications:

- 2.4 GHz Carrier Frequency
- Commonly available in 2, 4 and 6 channels

- Range of over 200m
- No Frequency clash
- Interfaces with Phoenix Series Motor Drivers and Whiplash Series Motor Drivers
- Plug and Play

CC2500 RF Module

This CC2500 Based Wireless module is a plug and play replacement for the wired Serial Port (UART) . This CC2500 based Wireless module allow engineers of all skill levels to quickly and cost-effectively add wireless capabilities to virtually any product.

Specifications:

- 2.4 GHz Carrier Frequency
- 255 possible channels
- RS232 UART interface with variable baud rate
- User friendly GUI for setting up RF Module
- Direct Replacement for wired Serial Cable for and serial communication

ZigBee Wireless Module

This is long range high speed serial wireless communication module which can give range of 30 meters indoor or 100 meters outdoor. This module is ideal for robot to robots or robots to PC communication. This ZigBee wireless device can be directly connected to the serial port (at 3.3V level) of your microcontroller. By using a logic level translator it can also be interfaced to 5V logic (TTL) devices having serial interface. This module supports data rates of up to 115kbps. It has indoor range of 30 meters and outdoor RF line-of-sight range of up to 100 meters.

DTMF Module

This module is based on the concept of DTMF Decoding. One can use mobile phone to control the bot

RF Remote Control Module

Modified RF Modules can be used to control wireless bots. But for every frequency you use, you need to have an alternate frequency readily available (i.e. if you are using 3 frequencies then you need to have 3 more alternate frequencies readily available)

You can buy components from Sp Robotics

Point System:

In Group Matches Points Awarded :

Win 3 points

Tie 1-1 each

Loss 0 points

Top teams from each group will go through to the knock-out rounds. If more than one team is having same points after group matches, Goal Difference (Goal Fired-Goal Against) will be the criteria for qualification to next round