

# Hydraulic Crane

...meld the mechanics 

**Description:** A Hydraulic crane is a type of heavy-duty equipment used for lifting and hoisting. Unlike smaller cranes, which rely on electric or diesel-powered motors, hydraulic cranes include an internal hydraulic system that allows the crane to lift heavier loads. This fluid filled hydraulic system enables the crane to transport objects such as heavy shipping containers and tractor trailers, which are well beyond the size and scope of any other lifting devices. In this event we will be testing your building skills and basic knowledge of engineering. The Team should prepare an electrically operated hydraulic crane as per the requirements mentioned in rule chapter.

**Team size:** 3 - 4

**No. of rounds:** 2

Round 1: Design evaluation and inspection – 21-02-2020

Round 2: final evaluation – 22-02-2020

**Event site:** Civil Engineering department

**Materials for use:**

- Any building materials.
- Fluid of your choice
- Syringes and vinyl tubes
- Any type of fasteners
- DC motors
- Glues and M-seal

**Rule chapter:**

- The crane should be capable of lifting an object of 1N from the ground.
- The movement of crane should be completely controlled electrically from a control panel.
- The usage of motor power is confined to the motion of hydraulic links. Any direct usage of motor for lifting the object is prohibited.
- The arm should have both vertical and horizontal motion.
- All the joints must be reliable.
- The team should submit a hardcopy of design report including the design calculations and methodology during round 1.
- All the electric connections must be properly insulated.
- The size of the model should not exceed 30x30x30 in cm.

**Evaluation criteria:**

- Model presentation – 30
  - Report – 20
  - Build quality – 20
  - Aesthetics – 10
  - Performance – 20
- Model presentation, report and build quality were assessed in round 1.
- Aesthetics and performance of the model were assessed in Round 2.
- Declaration of results will be in the closing ceremony of the fest.
- Winners will be declared based on the total score.

**Prize money:**

1<sup>st</sup> prize: 5500

2<sup>nd</sup> prize: 2500

\*All the participants will be provided with e-certificates.

**Name of the coordinator:**

🚦 Jana Pavani (Mech 4-A)  
7997922148  
[Pavanijana1998@gmail.com](mailto:Pavanijana1998@gmail.com)

🚦 Jampana Likhith Varma  
8520028181  
[likhithvarma@gmail.com](mailto:likhithvarma@gmail.com)



