

## MONSTER TRUCK MANIA :



## INTRODUCTION

Monster truck mania at VIGNITE 2010 has been supersized. Think big trucks, big air and big bucks. Think Big Foot and Scarlet Bandit. Think Big. At MONSTER TRUCK MANIA we aim to make engineering big fun.

### PROBLEM STATEMENT:

Build a fully remote controlled monster truck powered by an IC engine to go around a track in the shortest possible time. The track may consist of jumps, rough terrain, sand pits and tight turns. Visual appeal and design will be considered in the final evaluation.

### EVENT FORMAT:

The event will be held in two parts:

1. Qualifying rounds: These will include drag race and qualifiers will proceed to the finals and design will also be considered
2. Finals

### RULES:

#### Technical specifications:

1. Engine:
  - Maximum piston displacement allowed is 3.5 cc.
  - There is no restriction on the type of IC engine

(Either glow or diesel cycle engine), but the engine must have throttle control.

- It is also not necessary to use engine specifically made for car/trucks, airplane engines can be used however they will require torque increment by using gears.

2. Fuel:

- The fuel to be used should only contain: methanol, castor oil/synthetic oil, nitro methane. The percentage of nitro methane should not exceed 20% by volume in the fuel.
- Utmost one filter can be used in the fuel line.

3. Vehicle dimensions\*\*:

- The completed truck should be able to fit in a box of dimensions 700mmX500mmX500mm
- Antennae (if used) are exempt from the height restriction.
- The tires should be minimum 100 mm in diameter (B=50 mm) and 50 mm wide.
- The truck must have a minimum of 3.5 cm of ground clearance.

4. Parts that are to be fabricated by the participants:

- The chassis
- Suspension system
- Steering mechanism
- Platform for the electronics, engines and fuel tank.

5. Parts which can be used as available in the market or can be procured from toy cars:

- Gear box assembly, Differentials (if used)
- Suspension springs, Shock absorbers
- Drive line and rods
- Tires and wheels
- Clutch system
- Brake system

6. Power supply

- The machine must have an onboard power supply to provide power to any mechanism requiring electric power.
- The potential difference between any two points on the machine should not exceed **12V** at any point of time.

7. Clutch and brake: (strongly advised for maneuvering but not necessary)

- As some of the races will be held on loose sand, it is very likely that wheel speed will vary to a large extent. The engine may die out if the rpm goes below a certain limit.
- Therefore, participants are strongly advised to incorporate a clutch and a brake in their designs.
- Please note that these are not mandatory.

8. Radio controllers:

- The machine has to be necessarily controlled by a wireless remote control system.

• **Note** The teams should have to control three components of the car viz. the engine throttle, steering and brake system(if used).

9. Exhaust:

- All vehicles must have an exhaust system that directs the exhaust parallel to the ground or directly at the ground.
- Silencers must be intact while the vehicle is running.

10. Participants are advised to use robust suspensions with large travel and

ensure adequate ground clearance owing to the off-road nature of some of

#### **General rules:**

If the machine is found unsafe to run on the track, that team will be disqualified from the race.

The coordinators decision will be final and binding in this respect.

- All vehicles should have a complete body covering all internal mechanisms of the vehicle.
- Judges decision shall be treated as final and binding on all.
- At the time of registration, teams will be provided with a registration number and allotted time for qualifying rounds
- Any team that is not ready at the arena at the time specified will be automatically disqualified.
- The vehicles are not allowed to leave any loose parts on any part of the arena. Any vehicle disintegrating during the race will be disqualified.
- The teams must adhere to the spirit of healthy competition. The coordinators reserve the right to disqualify any team indulged in misbehavior.

#### **Team specification:**

- A team may consist of maximum 5 members. It is not mandatory for all the members of a team to be from the same educational institution.

- Each team must consist of at least 2 members.

Participants will need to submit pictures of their vehicle. We require pictures showing all major components of the vehicle in sufficient detail. Participants are requested to use at least a 5 MP camera

NOTE: We request you not to assume anything without discussing with us. Please feel free to contact us about any queries about the event.

#### **CONTACT**

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TUTORIALS WILL BE UP DATED SOON.....