

All Terrain Vehicle Designed & Developed by Mechanical Engineering students

Students of Mechanical Engineering have shown their Engineering Design Skills by successfully designing and fabricating an aesthetically attractive, fuel efficient, aerodynamically shaped, "All Terrain Four Wheel" vehicle. The students took the challenge to accept this project and have shown their acumen and design capabilities by developing the complete working model of the vehicle within the resources available at "High Performance Automobiles- Center of Excellence" at Global Institutes using the 3-D AutoCAD software of CREO-2.0. An all-terrain vehicle (ATV), also known as a quad/ quad-bike, has been designed and manufactured to handle a wide variety of terrain than most other vehicles. The rider can operate this vehicle like a motorcycle, at the same time four wheels give more stability at high speeds & during manoeuvrability. It is also an effective medium for navigating rocky, sandy, muddy and marshy terrains. The group designed and fabricated the vehicle with the scrap available from the market of various vehicles like Hero Karizma, Kerala Auto rickshaw, Bajaj Discover & Maruti 800's. The basic structure of the vehicle was designed and fabricated from the Tata made 1/2 inch C class circular iron pipe. The vehicle is run by the modified 223cc Hero Karizma engine attached to the in-house self-fabricated gearbox. Differential of Kerala Auto rickshaw was used. Modified suspension of Maruti 800 cc car was used at front; for rear suspension of Bajaj Discover was used. The single seat vehicle comfortably seats the rider and runs through different terrains. Modification of the 223cc petrol engine was done to achieve stability and off-roading capabilities. The modified engine delivered a max power of 14 BHP @ 5200 RPM and max torque: 13.35 NM @ 4500 RPM. The top speed of the ATV is 75 Km/hr. It could easily accelerate from 0-60 kmph in 6.3 seconds. On one full tank it can run for around 580 km. The operation and running of the vehicle was highly appreciated by the visiting experts from the NIT Jalandhar and Guru Nanak Dev Engineering College Ludhiana.



