SENIOR DESIGN PROJECT: EV 2 ABSTRACT

This team project was to create a go kart powered by an electric motor. Electric vehicles are becoming the future of the automotive industry due to their cleaner emissions, ever-increasing range of travel distances, and dwindling up-front cost. Many smaller go karts, dune buggies, motorcycles, lawnmowers, four-wheelers/all-terrain vehicles (ATVs)s, and mopeds are still driven by internal combustion engines. This is because no one really thinks about smaller engines. It should be stated however that the industries making these products have been slowly adapting their products to electric power in recent years.

The objective of this project was to design an electric go kart that would demonstrate that electric power is practical for go karts. A secondary objective of this project was to create a vehicle that Tennessee Tech's Mechanical Engineering Department could use as a demonstration vehicle. Everything about the electric go kart was designed by our team, with only the motor and battery being supplied by the College of Engineering. Every aspect of the electric go kart was tested during the construction phase, including the chassis, motor, battery, steering, maneuverability, ride comfort, and power output of the motor.

Our methodology was to follow general go kart designs that are popular on the market to show the viability of electric power for go karts. Our team started with the brainstorming/goal identification phase, followed by the design phase, which then led to the prototyping and construction phases. This was immediately followed by the testing phase, and we tested our go kart on the streets on Tech's campus. Our team met three times a week for two to three hours per meeting. Work was assigned based on the skills of each team member and respective schedules.