MISKOLCI EGYETEM
UNIVERSITY OF MISKOLC

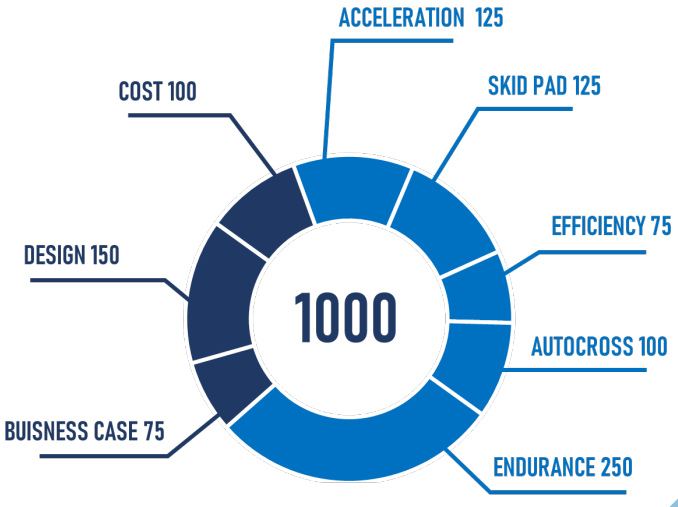
FORMULA STUDENT

The goal of **Formula Student** is to design, construct and introduce a formula racing car to a conceptual market and to race that car on several international racing events with the help of all members who have a legal student status. The organization ensures the team members gain valuable insights in their field of expertise and have the opportunity to build channels which enable smooth communication between the students of Formula Student and the supporter companies of the movement. These competitions are held in several countries across Europe, the most notable ones are Germany, England, Austria, and Spain.

An average **Formula Student competition** takes up to four days, which consists of two days of scrutineering and assuring that the car complies with various security rules. If it meets all these regulations, the vehicle will be allowed to take apart in the next two days of events. **These can be sorted into two main groups: static and dynamic.**

Static events are presentations which include defending the engineering design, presenting business plan and cost analysis. These give 40% of the total scores.

Dynamic events include the “Acceleration”, the so called “Skid Pad” which tests the suspension dynamics of the car on an “8” shaped track, and the “Autocross” which examines the car’s performance on a specific section of the racetrack during measured lap time. Finally, the “Endurance” event where the overall time performance and fuel efficiency of the vehicle are taken under scope on a 22 km long track.



Our Team

Electric Racing Miskolc is an initiative group of volunteering students located in Hungary, Miskolc, where team members can gather extensive understanding and experience in the automotive industry and various fields of motorsport. They can learn the true meaning of teamwork, as well as use their knowledge in practice.

The project provides opportunity to become familiar with the usage of the **most advanced technologies**, as well as offering an indirect way to the industrial companies for the students who are involved.

The team members are students of the **Faculty of Mechanical Engineering and Informatics, Economics and Materials Sciences**, who participate in the basic and master's degree program of the region's most significant institution of higher education and several professors and PhD students help our work.

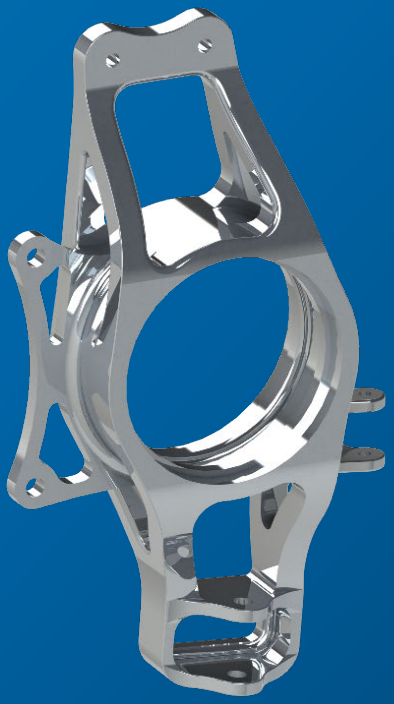
Besides providing the human resources, the University of Miskolc also provides the operation for the Electric Racing Miskolc with significant professional, infrastructural, financial support, and personal relations.

The interests and extra activities of the team members include the automotive industry and there are several the **national and regional scientific students' competitions** as well as **thesis works** to prove it. It is natural that the members of the Electric Racing Miskolc are willing to invest their free time into research and development of the project, proving their dedication to and success for the Formula Student movement.

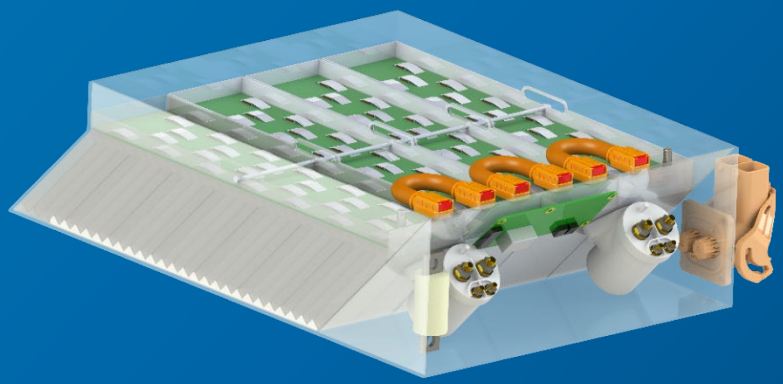
Developments

Like the Formula Student international competition series, our community has a duty to follow trends in the development of the automotive industry. The advancement and legitimacy of electric powertrains is unquestionable on both public roads and racetracks.

Our first **electric project car**, the **ERM-01** is a concept with a central electric motor, powered by an EMRAX 228 water-cooled BLDC motor and controlled by a UniTek BAMOCAR D3 control unit.



Our engine is powered by a self-developed battery pack made up of lithium polymer cells. A battery monitoring system developed by our members is responsible for the safety of the battery pack used to supply the low voltage system.



In addition, a complex telemetry system is provided in the car, thanks to which we can implement continuous data collection in a racing environment, which provides a detailed picture of each moment of the pilot in addition to the basic data.

Goals

As we are a first-year team, our main goal is to attend our **first ever race in the electric category, in 2024.** As our long-term plan, we would like to implement our own **self-driving system** on our car, to attend the autonomous contests as well.

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