



## About

The first team from Cairo University to enter Formula Student (the largest Motorsport event and the biggest competition for undergraduates)

## Mission

Design, build & compete with a Formula Student Race Car

## Description

Cairo University Racing Team (CURT) : is a chosen group of students entering Formula student competition. The goal is to design, manufacture and assembly a fully functional and competitive Formula Student car. To reach this goal we will need to use our knowledge, education and innovation to design and build the best possible Formula student car available and to come up with innovative solutions to solve design, manufacturing and managerial problems faced along the way.

the Team is divided into the following sections:

### **Technical departments:**

whose goal is to solve the technical design and manufacturing problems faced in each sector within the car and of which will have a significant impact on the car's performance and capabilities. These departments should each produce a fully functional system to be assembled together to form the full vehicle.

These departments are:

Engine: The heart of the car. Design ,select ,tune the engine to improve performance of the whole car.

Drive line: system designed to transmit the power of the engine to various parts of the car.

Suspension: System which is very critical in racing cars due to high speed cornering, contributes heavily to braking and steering which also ensures we have the best handling car.

Aerodynamics: Overcoming air resistance is paramount any team. also taking into consideration down force which helps to keep the tires firmly attached to the pavement during acceleration, deceleration, and turning. Finding the winning balance between these factors is a great deal of what separates good teams from the rest of the field.

Brakes: a system which is designed to decelerate the car after reaching high speeds

Electrical & Electronics: converting all the data to visible information by both driver and team.

Chassis: designing a whole body to withstand the forces, acceleration, masses of different components as it is a very testing task.

Steering: controlling the direction of the racing car at high speeds is a very asking job.

### **Managerial Departments:**

whose goal is to make sure that this project becomes a reality. These departments are responsible for vital tasks such as project management, fund raising, sponsors coordination, manufacturing and workshop allocation. Members within these departments will learn how to be in control of such an important project and will get a real life experience on how to solve managerial problems which face companies and organizations on daily basis. These departments are:

Marketing & Public relations: planning and implementing a full scale marketing strategy to ensure everyone who is interested in the field becomes aware of the project. The cornerstone to attracting sponsorship and informing public.

Fund raising: Dealing with potential sponsors is a daunting task but very rewarding. you actually are dealing with future employers or competitors in the field. there is no car without the ability to find resources to build it.

Human resources: since the team is more like a small company so HR deals with personal relations, communication systems, establishing rewarding and punishment systems. Also designs a full working system to led to best performance and quality.

Each of the managerial and technical teams are vital to success of the project and without any of them this project cannot be completed effectively since every department has a critical role to play within this project.

## **General Information**

What is Formula Student?

Organized by the Institution of Mechanical Engineers (IMechE), in partnership with various well known companies in the industry, Formula Student promotes careers and excellence in engineering, by challenging university students to design, build, develop, market and compete as a team with a small single seater racing car.

It provides the students with a real-life exercise in design and manufacture and the business elements of automotive engineering. It teaches them all about team working, under pressure and to tight timescales. It demands total commitment, lots of late nights, and many frustrations and challenges along the way, but the net result is the development of highly talented young engineers.

Formula Student attracts entries from universities all over the World, from the UK, mainland Europe and from the Americas, Asia and Australasia. For the universities, Formula Student represents a valuable project that blends academic work and learning with the development of practical engineering skills. They are increasingly using it to attract school leavers to their degree programmes, and to forge closer links with local industry.

The automotive and motorsport industries in particular, and many other high technology engineering companies, know just how important the continuing supply of high quality engineers is to their success. For them, involvement in Formula Student helps them maintain and develop that supply. At a time when many university engineering courses have difficulty filling their places, Formula Student uses the excitement and appeal of motorsport to open young minds to the world of possibilities that a career in engineering involves, and gives them a wealth of real experience to prepare them for success in that career.

For the purpose of the competition, the students are to assume that a manufacturing firm has engaged them to produce a prototype car for evaluation. The intended sales market is the non professional weekend autocross or sprint racer. Therefore, the car must have very high performance in terms of its acceleration, braking, and handling qualities. The car must be low in cost, easy to maintain, and reliable. In addition, the car's marketability is enhanced by other factors such as aesthetics, comfort and use of common parts. The challenge to the team is to design and fabricate a prototype car that best meets these objectives. Each design is compared and judged with other competing designs to determine the best overall car.

## **Why get involved?**

Young engineering students and graduates are exposed to marketing, time management, project management, team building, budgeting, presentation skills, and other management issues. Through Formula Student, they develop experience, skills and professionalism as "hands on" engineers, with a keen awareness of the often competing pressures of performance, cost, safety, reliability and regulatory compliance. The benefit to students is immense and is good experience for newly qualified engineers preparing to enter a career in motorsport, the automotive industry or many other areas of high performance engineering.

Companies involved with Formula Student through sponsorship get face to face access to these highly skilled young engineers, who could be viewed both as potential recruits and as potential future customers. Formula Student provides opportunities in brand awareness and sales, so whether you are an OEM, Tier 1 supplier, or SME, there are real business benefits to be gained!

The Annual Formula Student Event, where teams have their work judged by Industry specialists and demonstrate the performance of the car, is held at the end of each academic year normally in early July. It should be stressed that it is not simply the fastest car that wins; students have to balance speed with safety, reliability, cost and good handling qualities.