

Robotics I

Mechanical Foundations with VEX V5

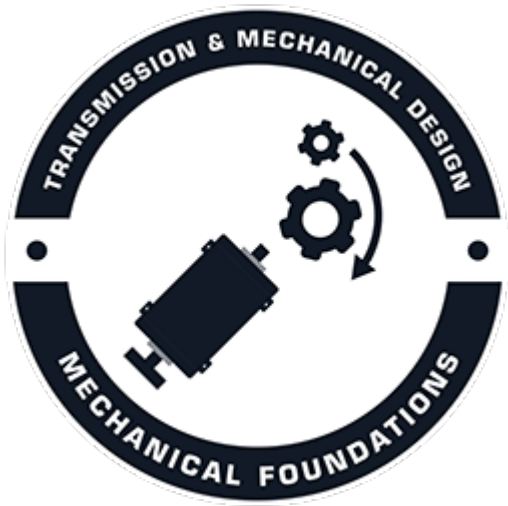
Learn how components of a robot connect and transfer motion

Mechanical Foundations focuses on mechanical concepts such as structural design, weight distribution, drivetrains, fastening, the relationship between speed and torque, and alternate methods of transferring motion such as linear slides and belts and pulleys. This curriculum familiarizes students with the foundational skills needed to understand how components come together and different use cases for creating motion. SMART is an ARM Endorsed program



Strength, Stability, and Balance with VEX V5

In Mechanical Foundations, we are introduced to how to go about creating simple, yet durable structural foundations, essential for any robotics system. We begin by identifying important parts that help in creating simple structures, and creating examples of some simple structures. The project for this Unit, you will be creating a reinforcement crane to demonstrate your understanding of simple structural design.



Transmissions and Mechanical Advantage with VEX V5

Transmissions work alongside motors to allow systems to deliver more Torque or Speed to its spinning parts. For this unit, we'll be taking a look into a few different examples to create Mechanical Advantage. The project will be to create a moving crane arm.



Drivetrains with VEX V5

Picking a drivetrain for your robot will greatly depend on the task that the robot is trying to achieve. The most basic drivetrain for a robot usually consists of a chassis, motors that are attached to the chassis, and wheels that are attached to the motor. This unit will have students building examples of drivetrains, and for the unit project they will design a custom drivetrain that can climb obstacles.