Arduino Engineering Kit Rev2

Code: AKX00022 / Barcode: 7630049201859

Overview

The Arduino Engineering Kit Rev 2 provides extensive learning outcomes, giving students a strong understanding of basic engineering concepts through fun projects that create a collaborative learning environment. Students are able to connect what they learn with real-world industries, are encouraged to think critically, and improve their depth of knowledge by learning through experimentation. Ideal for advanced high school and college students.

The Arduino Engineering Kit Rev 2 is a versatile, hands-on learning tool that demonstrates key control systems concepts, core aspects of mechatronics, and MATLAB® and Simulink® programming. The projects cover the basics of model-based design, control systems, image processing, robotics, signal processing, and more - plus they're fun to do! The kit includes all the physical components you need, including learning materials and software, to build the three projects: a self-balancing motorcycle, a webcam controlled rover, and a drawing robot. There's online step-by-step guidance, so it's ideal for students working in small groups or for facilitating remote learning.

The kit is primarily for three types of users: students learning about mechatronics engineering, professors looking for practical resources to support their class, and makers with an interest or background in robotics, either professionally or as a hobby.

**Adapting the kit and further experimentation**

Educators can freely tailor the Arduino Engineering Kit Rev2 to **their students´ needs and their own curriculum**. You can use this versatile kit as the core of a new engineering mechatronics class or freely adapt the content to your own ideas and experiments while implementing MATLAB® and Simulink®, for example as part of **laboratories and final projects**.

Opportunity for lots of experimentation for both educators and students. In addition to the three projects, **students have the freedom to experiment, design, and develop new solutions** using the software and hardware components in the kit, which are some of the **tools that are used in industry** and help students learn valuable career skills they'll use in the future. Students can also buy the kit and use it to experiment at home and for extended learning.

The kit includes online learning content material with step-by-step instructions, lessons and activities, ideal for students working in small groups or for facilitating remote learning. Students and professors can use this versatile kit´s content as the core of a new engineering mechatronics class or freely adapt the content to their own needs and curriculum.

The content is designed to help students to get started with the kit, Arduino, Matlab and Simulink, and the basics of mechatronics. At the same time, it includes in-depth step-by-step activities on how to build, design and program three projects that help students to learn fundamental engineering concepts, key aspects of mechatronics, and MATLAB® and Simulink® programming through a hands-on way.

Visit a preview of the content at this link.

https://youtu.be/3jO44SWjBnQ
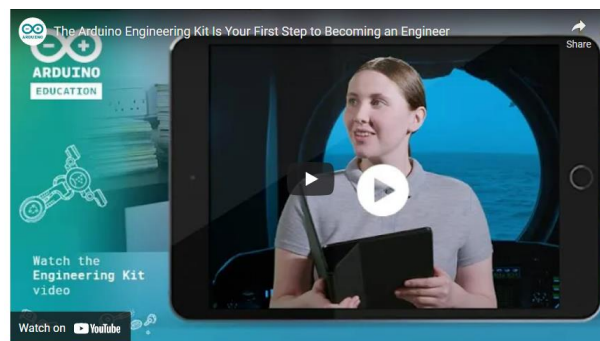
Tech specs

- The kit includes several customized parts, a complete set of electronics, and all the mechanical components needed to assemble each project (a webcam controlled rover, a self-balancing motorcycle, and a drawing robot):

    - Arduino Nano 33 IoT
    - Nano Motor Carrier with IMU and battery charger
    - Three sets of mechanical pieces to assemble the projects
    - Li Ion 18650 battery
    - Two geared motors with encoders
    - DC motor with encoders
    - Servo motor
    - USB cable
    - Two whiteboard markers
    - Two wheels
    - Allen key
    - Webcam
    - Nylon thread
    - Screws, nuts, and bolts

- A hard plastic, stackable toolbox ideal for storage and years of use

- A one-year individual license for MATLAB® and Simulink®
- Student e-learning platform with step-by-step guidance