



## ENGINEERING KIT R2

Challenge high school and college students and help them develop hands-on engineering skills

Challenge engineering students and help them develop physical engineering skills with the Arduino Engineering Kit R2. Featuring cutting-edge technology, the kit is a practical, hands-on tool that demonstrates key concepts, core aspects of mechatronics, and MATLAB® and Simulink® programming. Ideal for advanced high school and college students, the three projects teach the basics of engineering - plus they're fun to do!

**NUMBER OF STUDENTS PER KIT:** Optimal for 3 students per kit

**NUMBER OF LESSONS / PROJECTS:** 3 Projects

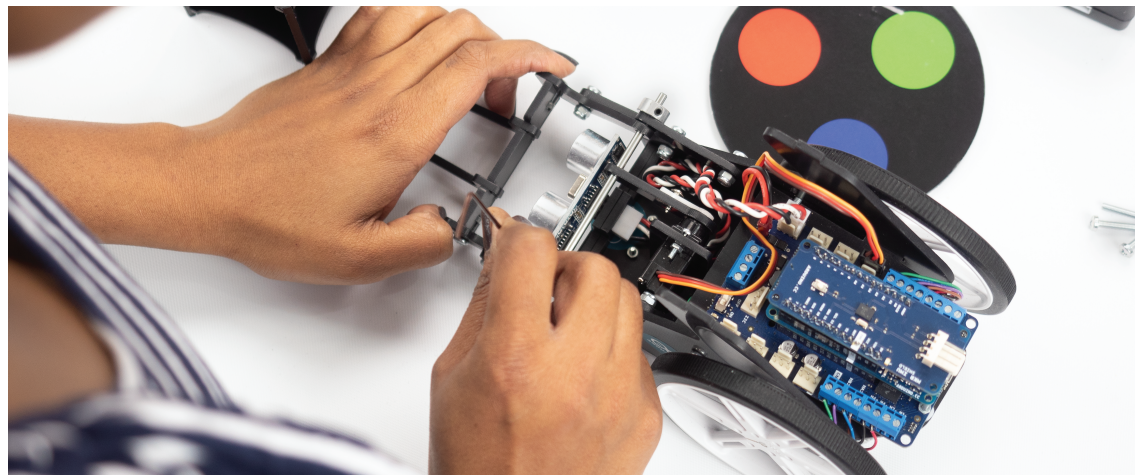
**LANGUAGES:** English, German

**TARGET:** 17+ years (University)

**For more info visit:**

<https://www.pitsco.com/Arduino-Engineering-Kit-v2>

Developed in partnership with



### WHAT IS THE ARDUINO ENGINEERING KIT?

The Arduino Engineering Kit Rev2 features three hands-on projects: a self-balancing motorcycle, a drawing robot, and a mobile rover. **Self-balancing motorcycle:** This motorcycle can maneuver across different terrains and remain upright using a flywheel for balance. **Mobile rover:** The rover navigates between given reference points, moves objects with a forklift and much more. **Whiteboard drawing robot:** Build and program a robot that can duplicate any drawing it's given and on a whiteboard. In addition to the open-source hardware in the kit, each student has access to an e-learning platform with step-by-step instructions, lessons, and other learning materials. Students also get a one-year free individual trial license for MATLAB and Simulink, providing them with hands-on experience in system modeling and embedded algorithm development.



## KEY LEARNING VALUES

The online platform helps students learn fundamental engineering concepts, key aspects of mechatronics, and MATLAB and Simulink programming. Learning values include:

- System modeling
- Control theory
- Robotics and mechatronics
- Image and video processing
- Matlab and Simulink programming.
- How to analyze and visualize data.

Applying custom algorithms for complex math operations, image processing, and PID control.

How to model and simulate behavior of dynamic systems.

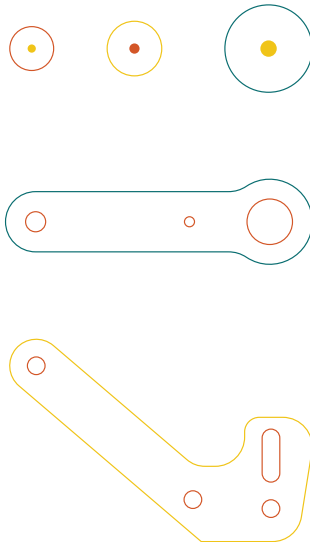
How to incorporate logic-based algorithms that define system behavior for different "states", for example, move forward, turn, stop.

## PRODUCT BENEFITS

Extensive learning outcomes provide students with a strong understanding of basic engineering concepts.

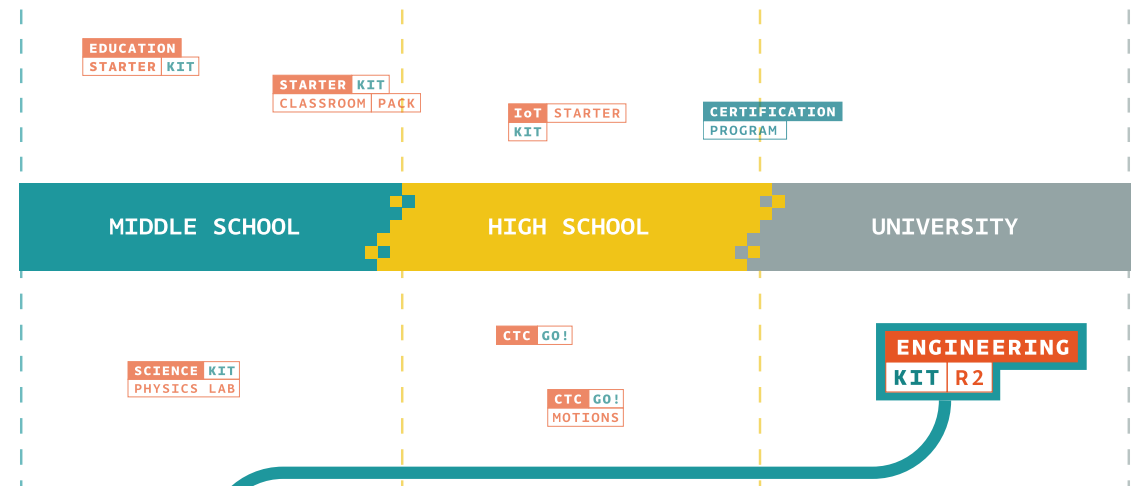
Projects are fun, creating an environment in which students want to learn.

Broaden your students' 21st-century skills with collaborative learning and problem-solving, and challenge them to think critically.



## ARDUINO® EDUCATION LEARNING EVOLUTION

Our aim is to help students achieve their dream careers in STEAM. Our cross-curriculum content and open-source approach are essential tools for **STEAM** classes that develop with students as they progress through middle school, high school, and university, preparing them for a successful future.



Step by step, we champion students as they progress through their STEAM education with projects that increase in complexity to challenge them as they develop their skills.

We support students in achieving successful careers in STEAM-related fields with educational kits that are targeted to their age and ability. The technology is practical, creative, and fun. Students learn using the same products that companies around the world use in applications like rapid prototyping, AI, drone technology, and developing machine learning.



We are currently focused on translating our content into more languages and mapping it to more curricula. If you have a project that you would like to have localised for your country, please contact us with your suggestion.