

AI Coding (9+ y/o)

AI101 - Arduino for Robotics

Arduino for Robotics course combines the world of electronics with software and make your project ideas come to life! Whether it's programming your own smart watering device that will automatically water your plants according to the correct moisture level, or making a sun-tracking solar array, our Arduino course is the right place to start. You'll learn the basics of electronics and programming in Arduino C, while at the same time, incorporating the knowledge you learn into projects that you're passionate about. The future of microcontrollers is now and explore all the possibilities that Arduino has to offer!

Contents

Arduino I (Level 1)

- Unit #1 – Introduction
Projects: Using tinkercad, create a simple circuit to power an LED
- Unit #2 - Ohm's Law, and short circuits
Projects: Ohm's law practice problem with circuit diagram
- Unit #3 - Basic Electrical Components
Projects: Make a rainbow of LED's
- Unit #4 - Arduino Programming
Projects: Serial Communication between 2 arduinos
- Final Project: Button control, Multi-mode LED Strip (Fade, Strobe, Flash)

Arduino II (Level 2)

- Unit #1 –PWM (Pulse-width modulation)
Projects: potentiometer servo control with variable speed
- Unit #2 – Sensors: Analog vs Digital sensors, temperature / humidity sensors
Projects: Read atmospheric conditions with sensors, compare.
- Unit #3 – Sensors Continued: ultrasonic, light, and IR
Projects: Ultrasonic with and without temp factored in VS without
- Unit #4 - Piezoelectricity, tones, and how these bridges digital & analog world
Projects: Create a song of your choice (At least 16 notes)
- Final Project: Come up your own idea

Syllabus: <https://school.thinkland.ai/syllabus/>



Curriculum: <https://school.thinkland.ai/curriculum>

Teachers: <https://school.thinkland.ai/teacher>

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