

Arduino Fundamentals for Secondary Teachers

Presented by Sanjin Dedic



```
Serial.println("Get Started");
```

This course teaches the fundamentals of Arduino which is a small cheap programmable computer on a microchip. Once students can program Arduino's possibilities are endl...

Format: 1. Face to Face

Audience: Teachers of Secondary Digital Technologies, Systems Engineering & teachers of various elective subjects that include coding & robotics

Description

Arduino is a microcontroller, a small cheap programmable computer on a microchip. Over the last decade Arduino has become very popular with a broad range of audiences: universities, schools and maker communities automating everything from robots, 3D printers, sport equipment, scientific experiments and devices in the home. In this course we will step through a classroom tested Arduino learning sequence and learn how to read schematics, construct circuits, write and troubleshoot code.

Additional notes about this format

Teaching Standards

2.6.2 Proficient Level - Information and Communication Technology (ICT)

3.1.2 Proficient Level - Establish challenging learning goals

3.2.2 Proficient Level - Plan, structure and sequence learning programs

Are you in NSW? If so, this is relevant for you



Completing this course will contribute 5 hours of NSW Education Standards Authority (NESA) Registered PD addressing 2.6.2, 3.1.2 & 3.2.2 from the Australian Professional Standards for Teachers towards maintaining Proficient Teacher Accreditation in NSW.

TTA (Teacher Training Australia) is endorsed to provide the NSW Education Standards Authority (NESA) Registered Professional Development for teachers accredited at Proficient and Lead Level Teacher.

Occurrences

There are no occurrences of this format in Australia (NSW) at this time.

Sessions

Build basic electric circuit with LED's, buttons and buzzers.

1 hour

The goal of this session is to tackle circuitry without the added complexity of programming. Participants will get comfortable with reading schematics and using LED's, push buttons and buzzers.

Counters, LED's, Random Commands and Reaction time

1 hour and 30 minutes

We will start off by programming a basic blink circuit and adding some variables. We will then program a counter that works with various units of time. Finally we will introduce if statements which can freeze the counter by detecting a press of a button this will in effect be a reaction time measuring circuit

RGB Led's

45 minutes

In this session we will create two programs that use RGB led's to generate all possible colours with the help of Arduino PWM functionality.

Voltage Dividers Sensing Light

45 minutes

In this session we will set up a voltage divider with an LDR and measure light intensity. We will then add an if statement to a program and make it work so that it turns on LED's when it is dark.

Attendee Choice and Q&A

1 hour

Option 1: Create and program circuits that respond to sound: clap switches and sound reacting LED panels.

Option 2: Discuss the class pedagogy and the ideal use of the assessments and tutorials provided in the course

About the presenter



Sanjin Dedic

Creator

Sanjin Dedic is a robotics engineer and an experienced educator in the field of Digital Technologies. Throughout his teaching career Sanjin has been at the forefront of the latest educational technologies, in 2013 he brought Arduino, 3D printing and the make movement ethos into the classroom, he since authored Python curriculum in use by dozens of Victorian schools and co-authored a book on the BBC micro:bit, both aimed at students in Years 7- 10. He currently teaches at the King David School in Melbourne and works with Digital Learning and Teaching Victoria, Teacher Training Australia and The Digital Technologies Hub to share the latest in educational technology and pedagogical approaches with fellow teachers.



Enrol now to secure your spot

Limited spots are available. Please enrol online or fax your enrolment to 1300 667 691 to secure your spot.

Please note, by submitting this enrolment form you are confirming that you have been given financial approval by your employer to attend this course. Cancellation advice should be given in writing 7 days before the commencement of this course.

Product: Arduino Fundamentals for Secondary Teachers

Occurrence Date:

Your Name:

Your email address:

Employer name:

Employer phone:

Enrol online at <http://tta.edu.au>