



**INNOVATION HUB**

Appleton (Tech.) Road, University of Ibadan

# LPI STEM EDUCATION

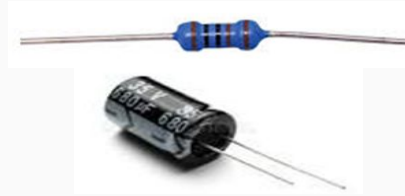
*PRESENTED BY:*  
*ADENUSI CECILIA*  
*STEM CORDINATOR*

# CONTENTS

- Basic Eletronics
- Soldering & Desoldering
- STEMSEL & Arduino  
Microcontroller
- Coding
- Internet of Things
- Robotics
- Drone Technology
- Success Stories

# Basic Electronics

- Printed Circuit Board (PCB)
- Diodes
- Resistors
- Jumpers
- Capacitors
- Terminals
- Transistors
- Integrated Circuit
- Voltage Regulator
- IC Sockets



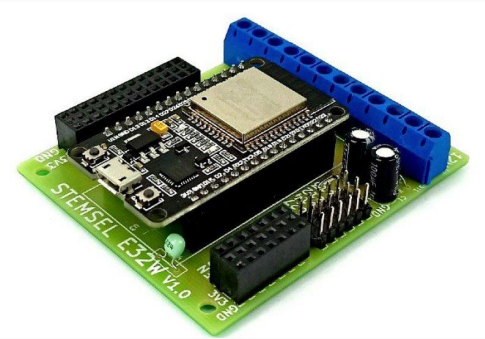
# Soldering & Desoldering



- Vero Board
- PCB
- Soldering Iron
- Soldering Led
- Multimeter
- Cutter
- Plier
- Screws

# STEMSEL / ARDUINO MICROCONTROLLER

# Microcontrollers



- Microcontrollers are compact integrated circuits (ICs) that consist of a microprocessor core, memory, and peripherals on a single chip
- Microcontroller is a like a brain of a robot

# STEMSEL Microcontroller

runlinc online

[ceceresearch\\_Open Files Logout](#)

Local

Load File

Save

runlinc.com

Upload

Run Code

Board IP

STEMSEL

PORT	CONFIGURATION	NAME	STATUS
A3	DISABLED	<input type="text"/>	
B4	DISABLED	<input type="text"/>	
B6	DISABLED	<input type="text"/>	
C0	DISABLED	<input type="text"/>	
C1	DISABLED	<input type="text"/>	
C2	DISABLED	<input type="text"/>	

CSS

HTML

JavaScript

Select Macro



# Arduino Microcontroller

File Edit Sketch Tools Help



sketch\_jul01a

```
void setup() {  
  // put your setup code here, to run once:  
  
}  
  
void loop() {  
  // put your main code here, to run repeatedly:  
  
}
```



# Coding Microcontroller

## STEMSEL CODING

- HTML
- CSS
- JAVASCRIPT

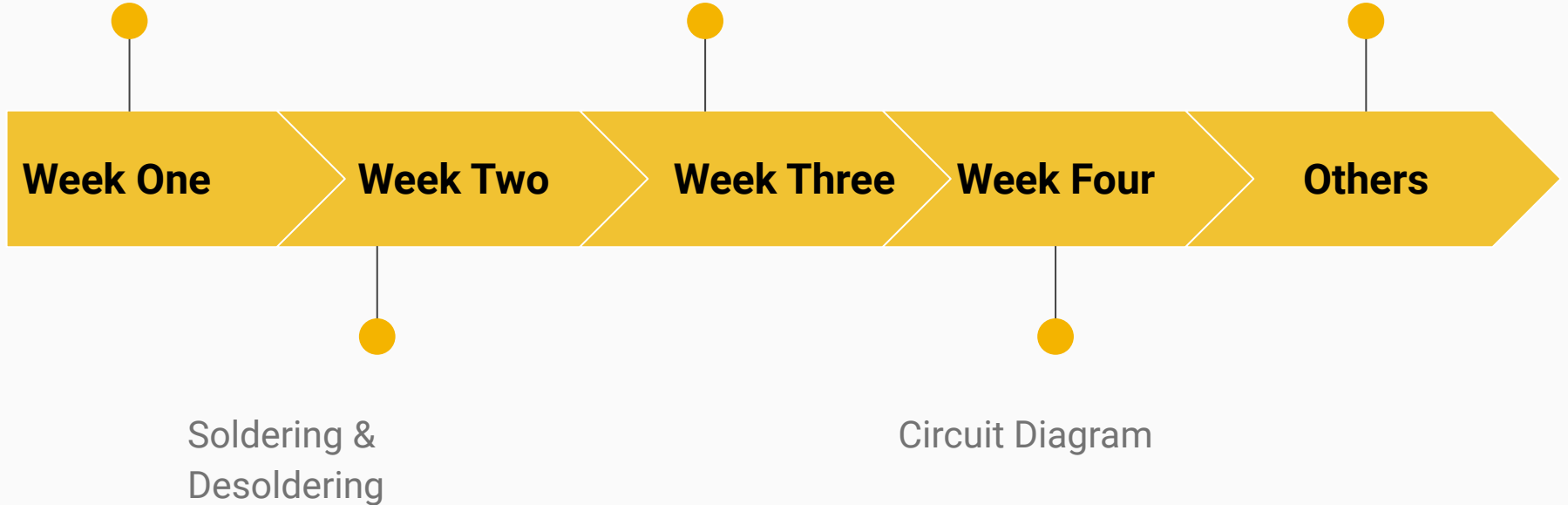
## ARDUINO CODING

- C++

Basic Electronics

Microcontroller

IoT, Robotics &  
Drone Technology



## PROPOSED TEACHING STRUCTURE

# Internet of Things

- Smart Light
- Traffic Light
- Home Automation
- Alarm System
- Smart Attendance System
- Temperature Control
- Fluid Level Sensor

# Robotics

- Robot Car
- Robot Arm
- Patrol Robot
- Domestic Robot
- Industrial Robot



# Drone Technology

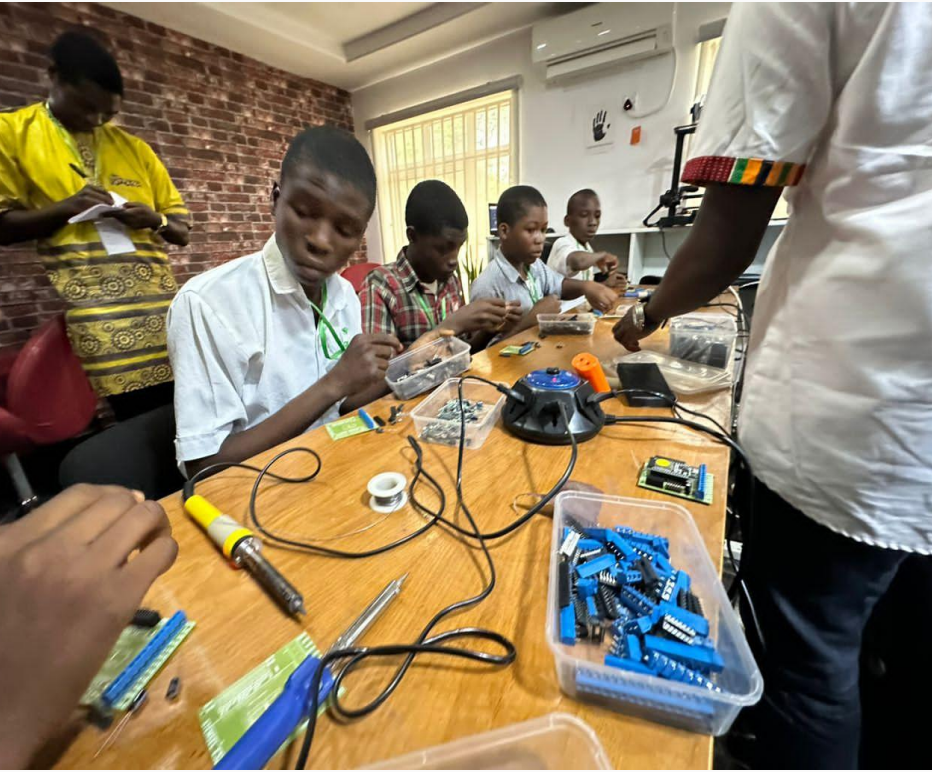
- Building & Coupling Drone
- Coding Drone using python or JS
- Flying , Controlling & Landing of Drone
- Educational Robot
- Industrial Robot



# Success Stories



- Methodist Grammar School
- Abadina Grammar School
- Abadina College
- Ojoo High School



# International Partners & Mentors



Dr Peng Choo  
Director  
STEMSEL Australia



Dr Miro Koteski  
Chief Technician Officer  
STEMSEL Australia