**Embedded Engineering**

* **C Programming**
  + Fundamentals
  + Variables, Keywords, Operators
  + Loops, Switch Statements
    - If, If else
    - For
    - While
  + Continue, Break, Jump to, Operators
  + Programs related to above Topics
  + Qualifiers, Memory Organization
  + Storage Clones, Functions
  + Arrays, Pointers, Structures, DMA, Union
  + Data Structures
    - Arrays, Linked Lists, Push, Pop, Sort, Search, File System
  + C++ Basics
* **Embedded**
  + Fundamentals of Basic electronics
  + uC vs uP
  + RISC vs CISC
  + Basic uC Architecture
  + VS code installation & setup
* **ESP-32**
  + - GPIO, LED
    - Switch
    - Timer ISR
    - External ISR
    - ADC
    - DAC
    - PWM
    - UART
    - I2C
    - SPI
    - RTC
    - Touch
    - DHT-22
    - OLED
    - SD card
    - Relay
    - Bluetooth BLE basic
    - Wi-Fi (Station, AP, Scan)
    - Sleep Modes
* **API’s**
  + - REST API
    - GET Command
    - JSON object handling
* **Protocol** 
  + - HTTP
    - MQTT
* **Server**
  + - Local Webserver
    - Web Sockets
    - Hosting Webserver on a Chip
* **Other Concepts**
  + - Creating IoT Dashboards using Things Board
    - NTP Server Usage
    - Internet Pinging
    - Time management using EPOC Timer