Course Title: *STM32 Based Embedded Systems*

Syllabus

1. Introduction;
2. STM32 F4 Architecture in General;
3. Quick start on ST Nucleo-F401RE with MBed;
4. Using Nucleo's Virtual Com Port;
5. Using Nucleo's Input/Output;
6. Interfacing Buttons and Keyboard;
7. Implementing delays in MBed;
8. Interfacing LEDs;
9. Implementing PWM;
10. Working with RTC;
11. Design and Development Process in STM32 based Embedded Systems;
12. Interfacing DS19b20 Temperature Sensor;
13. Timers;
14. Interfacing 16x2 LCD;
15. Working with USART;
16. Implementing DMA;
17. Implementing Interrupts;
18. Finite State Machines;
19. Working with FLASH Memory;
20. Interfacing Arduino Motor Shield;
21. Debugging Techniques;
22. DAC and Sound;
23. ADC and Data Acquisition;
24. Interfacing ESP8266;
25. Wireless Communication and the Internet of Things;