



### RCETECVA03 -Embedded using Raspberry Pi

#### Course outcomes:

- After completing this course, students should demonstrate competency in the following skills.
- To control and manage a hardware device designed for that specific device in order to optimize its specific requirements and maximize its usefulness.
- Able to apply in the real life applications.

#### Syllabus:

##### UNIT I

The Raspberry pi computer, interface-raspberry pi configuration tool-Programming examples –Packages-losant

##### UNIT II

Wiring, Testing-Web services-NGINX-Arduino Libraries-Arduino interfaces

##### UNIT III

IR Arduino communication-magnetometer, PIR sensor, DC motor, Stepper motor, Thermistor, OLED Interfacing- Arduino IDE Third party hardware, preference, support

##### UNIT IV

Arduino Programming-Applications of IOT-Connecting IOT to cloud –Cloud storage for IOT

##### UNIT V

Cloud storage for IOT –Data analysis for IOT –Improved equipment maintenance –Challenges and barriers-Software management tools for IOT

#### Reference Text Books:

1. Adrian McEwen and Hakim Cassimally, —Designing the Internet of Things, John Wiley and Sons Ltd, UK, 2014.
2. Vijay Madiseti, Arshdeep Bahga, —Internet of Things (A Hands-on Approach), Universities Press, 2015.
3. Dieter Uckelmann, Mark Harrison, Florian Michahelles, —Architecting the Internet of Things, Springer, New York, 2011.