



DEPARTMENT OF ELECTRONICS
MSc Electronics

ELS 552 - INTRODUCTION TO ARDUINO, RASPBERRY- PI AND BEAGLEBONE BLACK

Unit I

14 Hours

Home Automation using Raspberry Pi and Arduino: An Introduction to the Raspberry Pi, Arduino, and Home Automation, Setting up Raspberry Pi, Setting up Raspberry Pi to Arduino Bridge Shield, First Project–A Basic Thermometer, From Thermometer to Thermostat.

Unit II

14 Hours

Home Automation using Raspberry Pi and Arduino: Building upon the First Project, Temperature Storage–Setting up a Database to Store Your Results, Curtain Automation–Open and Close the Curtains Based on the Ambient Light, The future of home automation

Unit III

14 Hours

Programming the Beagle Bone Black: JavaScript Basics, JavaScript Functions and Timers, Arrays, Objects, and Modules, Bone Script, Hardware Interfacing, Using Capes and Modules, Web Interfaces, A Roving Robot, E-mail Notifier

TextBooks:

- (1). “RaspberryPiHomeAutomationwithArduino”-AndrewK.Dennis,Packt,2013
- (2). “Programming the BeagleBone Black-Getting Started with JavaScript and BoneScript” -Simon Monk, McGraw Hill,2014

References:

- (1). “Bad to the Bone - Crafting Electronic Systems with BeagleBone and BeagleBone Black”- Steven F. Barrett , Jason Kridner, Morgan and Claypool Publishers,2013
- (2). “Exploring Beagle Bone Tools and Techniques for Building with Embedded Linux” -Derek Molloy, Wiley,2015
- (3). “The official raspberry pi projects book”- from the makers of magpi, the official RaspberryPi magazine
- (4). “Raspberry Pi Cookbook” - Simon Monk, Oreilly ,2013