

CERTIFICATE COURSE

Raspberry Pi & Python Programming

Department of Computer Science

No registration fee for students from MES College Erumely

Starting On - 10-11-2020



MES COLLEGE ERUMELY

(Approved by Govt. of Kerala & Affiliated to Mahatma Gandhi University)

A Minority Institution Certified by National Minority Education Commission

Directorate of Human Resource Development Council (HRDC)

Director : Rejoola O.M. - 8289 882 175

MES COLLEGE ERUMELY
DEPARTMENT OF COMPUTER SCIENCE
RASPBERRY PI PROGRAMMING USING PYTHON
(CERTIFICATE COURSE)

Objective:

To know about the basics of Linux Operating system and Cyber Security. Also, to familiar with Python Programming and IoT.

Total Hours: 30

MODULE – I	(6 hrs.)
LINUX: The Linux system – What is Linux? open source, FSF, Linux Architecture - Linux file systems, hardware requirements for Linux, Linux standard directories. Commands for files and directories – CD, LS, CP, RM, WHO, MKDIR, RMDIR, PWD. Creating, viewing, editing, and comparisons of files using touch, cat. Vi editor- WC, MORE, LESS, HEAD, TAIL, PR, CUT, SORT, UNIQ, GREP	
MODULE – II	(6 hrs.)
Python Programming: Introduction-Features of Python, Applications, Conditional Statements, Control Statements, Lists, tuples, and dictionaries; basic list, tuple and dictionary operations, OOPs concept, Creation of class and objects, Inheritance, Polymorphism, Functions- arguments and return values; formal vs actual arguments, Creating Modules, import Statement, Locating Modules, Basic File Operations.	
MODULE – III	(6 hrs.)
Internet Of Things: Introduction – features, components and architecture of IOT, working principle, IOT development Boards, communication technologies, IOT applications.	
MODULE – IV	(6 hrs.)
Raspberry Pi: Introduction, RPi models, RPi programming languages and OS, GPIO interfacing, Interfacing with Raspberry Pi, controlling the brightness of LED, switch interfacing, temperature sensor.	
MODULE – V	(6 hrs.)
Computer Security: Types of attacks, authentication, cryptography, IOT security, challenges in IOT, general challenges in IOT connectivity, security concerns in IOT enabled devices, Raspberry Pi security vulnerabilities, Raspberry network security.	

Reference:

- “UNIX Concepts and Applications”- Sumitabha Das
- “The Fundamentals of Python First Programs– Kenneth A. Lambert
- “Internet of Things” – Michael Mitter
- “Internet of Things: Architecture & Design” – Raj Kamal
- “Raspberry Pi cook book “- Simon Monk

About the Course

The Raspberry Pi is a small, affordable single-board computer that you will use to design and develop fun and practical IoT devices while learning programming and computer hardware. In addition, you will learn how to set up the Raspberry Pi environment, get a Linux operating system running, and write and execute some basic Python code on the Raspberry Pi. You will also learn how to use Python-based IDE (integrated development environments) for the Raspberry Pi and how to trace and debug Python code on the device. Please note that this course does not include discussion forums.

The Raspberry Pi was designed to encourage young people to learn to how to code- the Pi in Raspberry Pi even comes from the Python programming language.

Who can apply : **Students Studying in BCA/BSc Programme**

The programme registration will be open from October - 15th
Classes Strated From -10-11-2020

Certificate will be issued on sucessful completion of the course

Total Hours : 30

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