

Course Introduction

18ES601ESP

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Vision

- Mould generations of electrical and electronics engineers on global standards with multi disciplinary perspective to meet evolving societal needs.

Mission

M1 Empower students with knowledge in electrical, electronics and allied engineering facilitated in innovative class rooms and state-of-the art laboratories.

M2 Inculcate technical competence and promote research through industry interactions, field exposures and global collaborations.

M3 Promote professional ethics and selfless service

18ES601 EMBEDDED SYSTEM PROGRAMMING 3-0-3-4

GNU Tools, Development and debugging Tools. Review of general C programming and data types, arrays, functions, pointers, structure, enum, files. Introduction to Embedded C, Interfacing C with Assembly. Embedded programming issues - Reentrancy, Portability, Optimizing and testing embedded C programs. Embedded Applications using Data structures, Linear data structures— Stacks and Queues, Linked List. Object Oriented programming introduction and basics, Scripting Languages for Embedded Systems - Shell scripting, Programming basics of Python. Software architecture of Embedded System

TEXT BOOKS / REFERENCES:

- 1. Behrouz A. Forouzan and Richard F. Gilberg, “Computer Science: Structured Programming Approach Using C”, Third Edition, Course Technology Inc., 2006.
- 2. Kirk Zurellm, “C Programming for Embedded Systems”, CRC Press, 2000.
- 3. David E Simon, “An Embedded Software Primer”, Pearson Education Asia, 2005.
- 4. Simon Monk , “Programming the Raspberry Pi: Getting Started with Python”, The McGraw-Hill Companies, 2013.
- 5. Michael Dawson, “Python Programming for the Absolute Beginner”, Third Edition, Cengage Learning, 2010.

List of course outcomes (cos):

- **CO1:** Understanding the basics of C programming, compilation process and tools used.
- **CO2:** Illustrate the usage of functions, pointers, file handling etc.
- **CO3:** Develop data structures for embedded computing
- **CO4:** Discuss embedded system programming issues
- **CO5:** Understand OOPs concept, various scripting languages and software architecture for embedded systems.
- **CO6:** Develop of application using embedded system programming concepts

All the best!!!!

```
#include <stdio.h>
int main(void)
{
    int count;

    for (count = 1; count <= 500; count++)
        printf("I will not throw paper airplanes in class.");
    return 0;
}
```

