

# **Embedded Systems**

## **Course Content:**

1. **ARM Processors:** Brief History of ARM, ARM Architecture, Addressing Modes, Instruction sets, Arm Thumb and Instruction sets, Memory concepts, System Control Coprocessor, Introduction to Vector Floating Point Architecture
2. **Microcontrollers:** Introduction to Microcontrollers, 8051 architecture, Addressing modes and instruction sets, Interrupts and Serial Communications, Programming Tools, Applications using Microcontrollers
3. **Digital Design:** Introduction, Digital Design using Field Programmable Gate Arrays(FPGAs)

## **Reference Books:**

1. Introduction to Embedded Systems, Shibu K V, Mc Graw Hill
2. Arm Architecture Reference Manual, <http://www.arm.com>
3. ARM System on Chip Architecture, Steve Furber, Pearson Education
4. Microcontrollers(Theory and Applications), Ajay V Deshmukh, Tat McGraw Hill
5. The 8051 Microcontroller and Embedded Systems, Mohammed Ali Mazidi, Rolin D Mckinlay, Pearson Education
6. Computer Organisation, Carl Hamachar, Zvonko Vranesic, Safwat Zaky, Mc Graw Hill