BSE2104 Computer Architecture (3CU)

Course Objectives; Upon successful completion of the course, the student should: (i) Have gained an understanding of basic components of the modern computer system; (ii) Be able to describe the operation of the various logic gets; (iii) Be able to design digital circuits; (iv) Demonstrate a good understanding of sequential and parallel processing; (v) Perform low level assembly programming; and (vi) Perform low level memory management.

Course Content; Computer Organization and Structures (based on the Von Neumann architecture. Processor unit organization: control unit, ALU, process or register and internal buses; hard- wired and micro-programmed control. Instructions sets, formats and types. Addressing modes, stacks, pipelining, RISC/CISC concepts. Memory organization and addressing; Memory hierarchy and cache. Special-purpose co-processors. I/O facilities and storage devices. The Operating System level.

References

•Computer Architectures: A Quantitative Approach, by D. A. Patterson and J.L.Hennessy, MorganKaufmannPublishers, 3rdEdition, 2003.

•StructuredComputerOrganisation,by Andrew S.Tanenbaum,4thEdition,January1999, PrenticeHallinc.,Upper SaddleRiver,NJ07548USA,ISBN0-13-020435-8