

Introduction to Computer Systems CCE1011

Coursework 2011-2012

The coursework carries 10% of the total mark of the course module.

Every student will be assigned one particular topic. There can be no change from the topic assigned.

A write up of about ten pages is to be presented, **individually**, on the topic. If it is felt necessary there will be a further oral examination.

While you are encouraged to use the resources on the Internet, please be aware that some double checking is necessary as the data is not always necessarily accurate, especially if it is dated. It is clear that cut and paste from Internet to your document does not make this your work. One appreciates that diagrams, illustrations, tables etc. already available, can be made use of, (duly referenced), but you must put an input at the level of comparison, discussion, advantages and disadvantages etc. of whatever topic, technology, etc. you are writing on.

Topics list

1. Cache memory organization in a RISC and a CISC processor (from a list below) – organization, write policy, replacement algorithm if applicable, levels of cache if applicable.
2. RAM organization on a PC board - use one type of dynamic RAM and one type of Static RAM include access to columns and rows, refresh strategy, refresh circuitry , discussion on different types - SIMM, DIMM, SDRAM.
3. Hard Disk Drive, (HDD) physical and logical organization including formatting techniques, error control techniques, types of motors and motor control.
4. (i) The Flash Memory – history, description, operation, types, size, applications advantages and disadvantages compared to other forms of data storage.
(ii) The USB system – history, description, operation, types, size, applications; advantages and disadvantages compared to other I/O connections to the PC

The list of processors for topic 1 is the following:

Power PC G4 ; Power PC G5; Pentium 4; Itanium; Itanium 2

* Any ONE other processor that has got a different organization/structure relevant to the discussion.