



G51CSA Lecture Notes #1

1. Main textbooks
 - A. William Stallings, **Computer Organization and Architecture**, 6th Edition, Prentice Hall Inc, 2003 (Main Text)
 - B. Andrew S Tanenbaum, **Structured Computer Organization**, 4th Edition Prentice Hall, 1999
 - C. Irv Englander, **The architecture of Computer Hardware and Software**, John Wiley & Sons, Inc, 2000
2. Aim of the course: Study the fundamentals of computer organisation and architecture and relate these to contemporary computer design issues.
3. Organisation and Architecture
 - A. Computer Architecture: Attributes of a system visible to a programmer or have a direct impact on the logical execution of a program.
 - B. Computer Organisation: Operational units and their interconnections that realise the architectural specifications.
 - C. Whether a computer will have a multiply instruction is an architectural design issue. How the multiply instruction is implemented - use a special multiply unit or make use repeated use of the add unit - is an organisation issue.
4. Computer Function: Data processing, storage, movement, and control
5. Computer Structure
 - A. Computer, CPU, Memory, I/O, System Connection
 - B. CPU, ALU, Control unit, Registers, Interconnections
 - C. Control unit, Sequencing logic, Control memory, etc
6. Course schedule, homework and examination