



2BA4 Computer Architecture and Microprocessor Systems

► Part II in Semester II

► Computer Architecture

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2BA4 Exam

► 8 Questions

► 4 Questions from Microprocessor Systems

► 4 Questions from Computer Architecture

► You must answer 5 questions

► At least 2 from Part I and 2 from Part II

► Please use separate answer book for your answers to Section **A** and Section **B**.



Part II - 2BA4 - Exam

► Questions will seek to establish that you have a good grasp of the following concepts:

► Microoperations

► Datapath

► Busses

► Alu/shift design

► Status bit generation and use

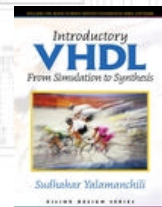
► Control unit design and operation



Course Text:

► "Introductory VHDL: From Simulation to Synthesis"

► "Logic and Computer Design Fundamentals" 2nd Edition updated, Mano (includes Xilinx Student Edition 4.2i software)





Organisation of the Course

► Lectures:

- Relate to chapter 7 and 8 of Mano & Kime textbook

► Prerequisite:

- Chapter 1-6 of Mano & Kime textbook from 1ba4

► Tutorials:

- Will largely be problems from Mano & Kime textbook and the two projects.

► Projects:

- There will be two in which you will be asked to design and simulate key elements of a process unit.



Assessment

- By examination and coursework
- Ratio 80% to 20% respectively
- You are required to obtain a pass in the coursework in order to achieve a pass in 2ba4



Course Objective

- The aim is to give you a good understanding of the design and operation of an instruction processing unit and the functional subsystems which execute these instructions.

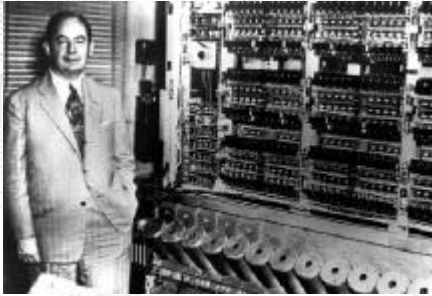


Von Neumann Architecture

- This design was first specified by John von Neumann in 1940 and so the resulting architecture is often called the 'von Neumann' architecture.
- Please see the following web page:
 - http://www-gap.dcs.st-and.ac.uk/~history/Mathematicians/Von_Neumann.html

John von Neumann

Born: 28 Dec 1903 in Budapest, Hungary
Died: 8 Feb 1957 in Washington D.C., USA



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Datapath and Control Unit

