

CSU22022 Computer Architecture I

Computer Architecture

► Lecturer: Dr. Michael Manzke

► Office: Stack B <https://goo.gl/maps/CrMbKSt5kpS2>

► Ext: 2400

► Email: michael.manzke@cs.tcd.ie



CSU22022 Exam

► All by Assignment

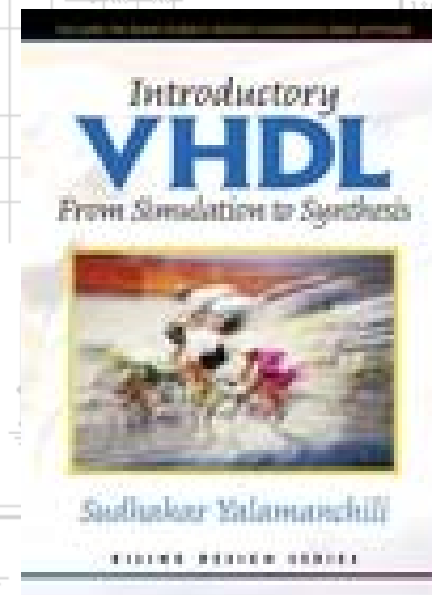
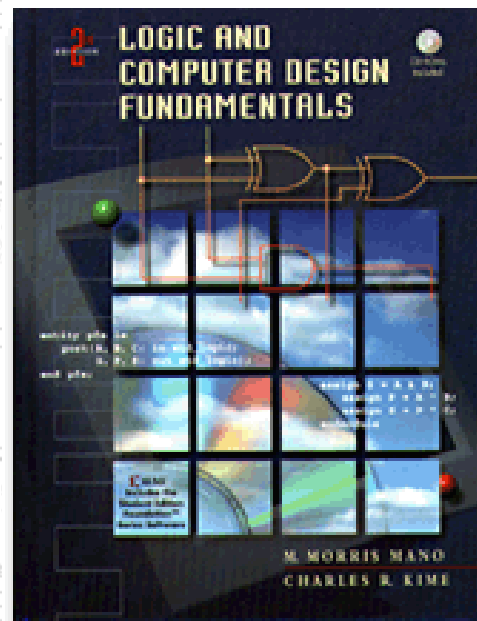
CSU2022- Assignment

► 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

Module 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 Module

▶ Lectures:

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

▶ Prerequisite:

- ▶ Chapter 1-6 of Mano & Kime textbook

▶ Tutorials:

- ▶ Provides you with help for the project

▶ Projects:

- ▶ You will be asked to design and simulate key elements of a processor.

Assessment

► By coursework

► 100%

Module 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.

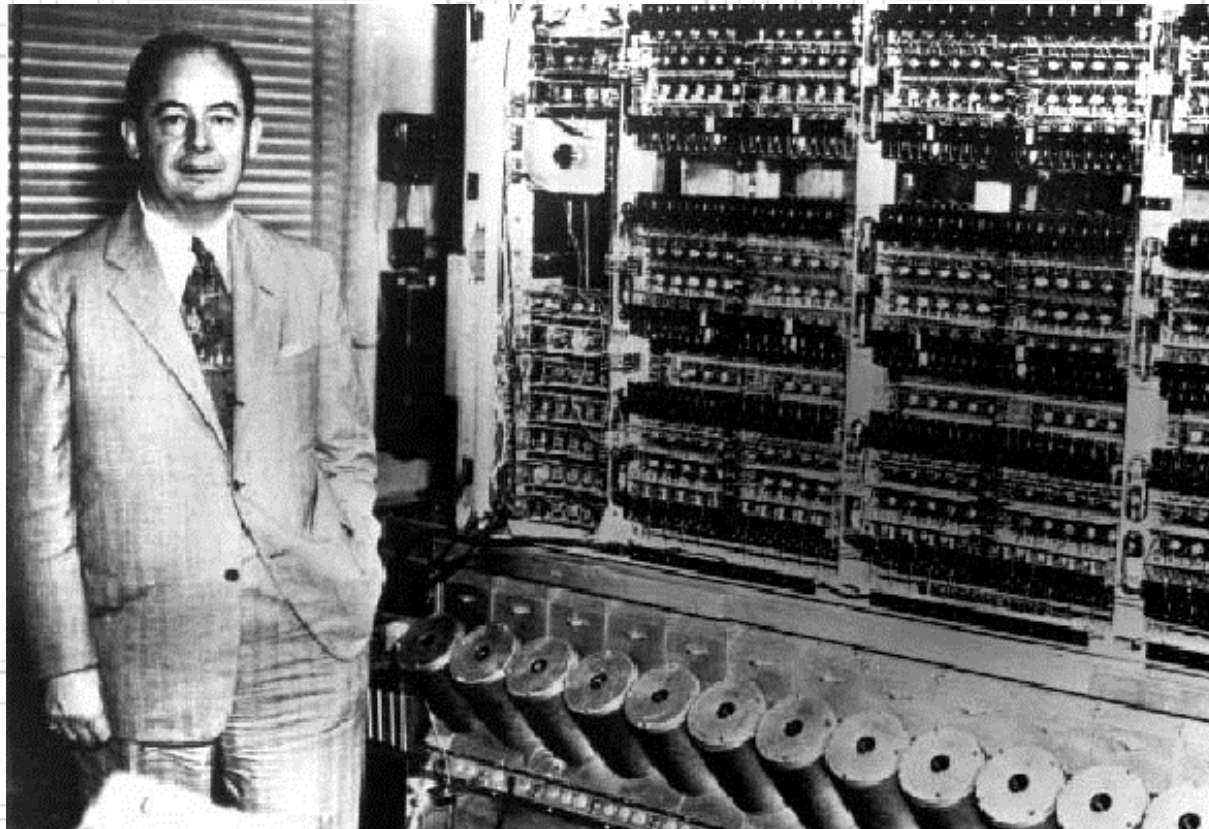
- ▶ Please see the following web page:

- ▶ 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



Datapath and Control Unit

