



# 60001

Advanced Computer Architecture  
Imperial College London

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# **Chapter 1**

## **Introduction**

# Chapter 2

## Pipelining

### 2.1 Instruction Layout

The instructions set architecture (ISA) determines the layout of instructions.

Here we consider the MIPS architecture

### 2.2 Datapaths

### 2.3 Pipeline Idealism

### 2.4 Pipeline Hazards

#### 2.4.1 Structural Hazard

Structural Hazard	Definition 2.4.1

#### 2.4.2 Data Hazard

Data Hazard	Definition 2.4.2

Forwarding Paths

Software Scheduling

#### 2.4.3 Control Hazard

Control Hazard	Definition 2.4.3

Early Branch Determination

### 2.5 Multithreading