

List of charts vs course syllabus items

Syllabus items

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Introduction - the notion of ISA - RISC vs CISC - Von Neuman CPU: single cycle vs multi-cycle	01	1 - 114
Basic pipeline - pipeline control - stalls & hazards - forwarding unit - hazard detection unit	02	1-45
Control hazards - branches - delay slot and its schedulation - exception in integer pipeline - precise exception management	02	46-59
Pipeline for floating point - POE ROE - Exception management for FP - new type of conflits	02	60 - 73
General description of conflict & dependencies - RAW - WAW - WAR	03 part I	2-3, 24-37
Performance - definitions - Amdhal law - CPI; CPI in a pipeline.	01	115 - 123
Integer pipelining examples - computing the CPI - extensions to FP	hand-outs	
Static ILP - The role of the compiler - loop unrolling - conditions - loop carried dependence - Software pipelining	04 part I	1-34 35-40
Memory hierarchy - caches - direct mapped caches - TAG INDEX OFFSET - cache dimensioning - hit/miss - write policies (Write through, write back)	05	1 - 37
RAM memory model - Miss penalty - example. Associativity - introduction - set-associativity - full associativity - multilevel cache	05	38-74
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Basic and advanced optimizations - pipelining - blocking caches	05b	1 - 15
Miss rate in simple loops: exercises - CPI - Cache performances: exercises on multi-level caches, overclocking, RAM	hand-outs	
Introduction to parallel processing. Parallel architectures taxonomy	6a	
Multiprocessors - Multicores - UMA NUMA COMA.	7	1-30
Parallel programming - general methodologies - approaches - decomposition - speed up	PP01	
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<i>Simple programming examples</i>	tbd	
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