CS533: Parallel Computer Architecture
Prof. Josep Torrellas
Spring 2023
Tentative Course Outline

1. Introduction to Architectures and Programming (2 lectures) 1/17 1/19

2. Scalable Cache Coherence (3 lectures) 1/24 1/26 1/31

3. Memory Consistency Models (2 lectures) 2/2 2/7

4. Prefetching (2 lectures) 2/9 2/14

5. Synchronization (2 lectures) 2/16 2/21

6. Multithreading (1 lecture) 2/23

7. Multiple Processors on a Chip (2 lectures) 2/28 3/2

8. Speculative Parallelization and Execution (2 lectures) 3/7 3/9

9. Processor and Memory Integration (2 lectures) 3/21 3/23

10. Reliability (3 lectures) 3/28 3/30 4/4

11. Interaction with Operating Systems and Databases (2 lectures) 4/6 4/11

12. Message-Passing Architectures (3 lectures) 4/13 4/18 4/20

13. Dataflow, Systolic, and Data-Parallel Architectures (2 lectures) 4/25 4/27

14. Other: Transactional Memory and Energy (1 lecture) 5/2

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Schedule of homeworks:
1/17
1/19
1/24
1/26         HW1 assigned
1/31
2/2
2/7                        Project proposals due
2/9
2/14         HW2 assigned   HW1 due (cache coh + mem cons)
2/16
2/21
2/23
2/28
3/2
3/7
3/9                        HW 2 due  (pref + synch+ M + CMP)
SPRING BREAK
3/21         HW3 assigned
3/23                        Midterm Progress Report in Class
3/28
3/30
4/4
4/6          HW4 assigned  HW3 due (CMP + Spec + P/M + Rel)
4/11
4/13
4/18
4/20
4/25
4/27
5/2                        HW4 due (Rel+OS+MS+data)
Later        Project Presentation + Final Report Due
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