

Florida International University
School of Computing and Information Sciences

CDA 6939 — Advanced Topics in Computer Architecture

Course Syllabus

Class schedule:

Monday 10-12:50pm, ECS136

Instructor:

Dr. Ming Zhao
Office: ECS 363, Lab: ECS 265
Email: ming@cs.fiu.edu, Web: <http://visa.cs.fiu.edu/ming>
Office hours: Tuesday 2-4:30pm and Wednesday 10am-12:30pm (ECS 265)

Prerequisite:

Permission of the instructor

Major Topics:

Instruction-level parallelism, Data-level parallelism, Thread-level parallelism
Multi-processor, Multi-core, Multi-threading, Warehouse-scale computers

Text:

Required Text:
“Computer Architecture, A Quantitative Approach”, 5th Edition

Recommended Texts:
“Parallel Computer Architecture: A Hardware/Software Approach”

Additional readings will be based a collection of technical papers provided by the instructor.

Course Description:

This course will include a review of fundamental computer architecture topics, including Instruction-level parallelism, Data-level parallelism, and Thread-level parallelism, as well

as the introduction of advanced topics, including Multi-processor, Multi-core, Multi-threading, and Warehouse-scale computers.

Discussion of the interactions between hardware and software in modern computer systems will be carried out as a central theme throughout the course.

Each student will propose a relevant topic for term project, study the related materials, develop and implement a research idea, and in the end report and present the results. State-of-the-art computer systems will be provided for students to conduct their course projects.

Grading:

Class participation: 50% (based on participation of in-class discussions)

Project: 50% (Proposal: 5%, Midterm presentation: 5%, Final presentation: 15%, Final report: 25%)

Policies:

Late submission of assignments will not be graded. There will be absolutely *no exception* unless it is due to verifiable cases of illness and emergencies.

All assignments must be done *independently*. Academic dishonesty will be treated *very seriously* according to the Student Academic Misconduct Procedures (<http://www2.fiu.edu/~oabp/misconductweb/unitinstructions.htm>).

University Policies: Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.