

MO601/MC973 - Computer Architecture II

Update

10/08 Lectures will start on Monday, 22nd.

22/jul Important dates in the school calendar: Graduate (<http://www.dac.unicamp.br/portal/pos/calendarios/calpos2016/index.html>) and Undergraduate (<http://www.dac.unicamp.br/portal/grad/calendarios/calgra2016/index.html>) programs.

Description

This course will cover tools and methodologies for Computer Architecture research including modern simulators, benchmarks for single/multi-cores and clusters. We will study recent papers on the area and how they model pipelines, caches, execution engines, power evaluation, etc.

Bibliography

The recommended bibliography contains:

- Processor Microarchitecture: An Implementation Perspective. Antonio González, Fernando Latorre and Grigorios Magklis. Synthesis Lectures on Computer Architecture. Morgan & Claypool Publishers.
- Modern Processor Design: Fundamentals of Superscalar Processors. John Paul Shen, Mikko H. Lipasti. Waveland Press. 2013.
- Papers from Top Computer Architecture Conferences

Evaluation

2 Written exams: 60% of final grade (30% each).

Practical Projects: 40% of final grade.

Grade ranges: A for grade > 8.4, B for grade > 6.9, C for grade > 4.9, D for grade < 5.

Any unethical behavior related to the evaluation process will result in failing the course with the lowest possible grade. Every assignment is an individual assignment unless otherwise mentioned. Students are not expected to see each other solutions to the assignments.

Office hours

How to find office hours for each course: [If you are a student](#) | [If you are a professor](#) | [Updates](#) | [Description](#) | [Time](#) | [Bibliography](#) | [Schedule](#) | [Evaluation](#) | [Email](#) | [Office hours](#) | [Projects](#)

Course Projects

Every assignment is an individual assignment unless otherwise mentioned. Students are not expected to see each other solutions to the assignments.

Project 1

Infrastructure: PIN and SPEC 2006

Tasks:

- Install SPEC 2006, execute it, understand the runspec script.
- Install PIN, execute a few examples. Understand how it works.
- Use the available pintools to count the number of instructions of each SPEC program.
- Create a new pintool and use it in, at least, 5 SPEC programs.

Project 2

Project 3

Project 4

Schedule

Date	Topic
22/ago	
26/ago	
29/ago	
02/set	
05/set	
09/set	
12/set	
16/set	Project 1
19/set	
23/set	
26/set	
30/set	
03/out	
07/out	
10/out	
14/out	Exam 1
17/out	Project 2
21/out	
24/out	
28/out	Holliday
31/out	
04/nov	
07/nov	
11/nov	

14/nov	Holliday
18/nov	Project 3
21/nov	
25/nov	
28/nov	
02/dez	
05/dez	Exam 2
09/dez	Holliday
12/dez	Project 4
16/dez	Backup