

CPE511 / IT511 / CPE636 - ADVANCED COMPUTER ARCHITECTURE

FALL 2018-2019 TERM PROJECT

Presentations : 09 January 2019

Report due : 15 January 2019

Aim: Survey and **comparison** on topics based on content studied in class.

Task: Form a **2-people** project **group** and choose a project topic from the list of “topic suggestions” or you may choose your own topic. You have to do a detailed research on your topic to get a basic grounding in the material and **find at least two different processors/systems and at least two journal papers** related on your topic.

Description: You need to define, explain and compare the processors/systems implementing the selected topic in a document of no more than 10 pages.

Topics:

Different approaches to achieve Instruction Level Parallelism (ILP)

SIMD vs Vector architectures

Multicore processor vs Multiprocessor

In-order vs out-of-order Superscalar processors

VLIW processors

Multimedia-extended microprocessors

Shared memory vs Distributed memory

Tightly-coupled MIMD vs Loosely-coupled MIMD

Thread-level vs Request-level parallelism

Warehouse Scale Computers (WSCs)

Graphics Processing Units (GPUs)