**CpE6110**

**Advanced Computer Architecture**

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**Office Hours:** By appointment

**Class notes and**

**reading materials:** Available at:https://hurson.weebly.com/cpe-6110-advanced-computer-architecture.html

**Reference**: Computer Architecture a Quantitative Approach, Hennessy and Patterson

**Outline:**

1. Performance and Cost Analysis

2. Instruction set Analysis

3. Scheduling/Load balancing

4. Memory hierarchies (revisit)

5. Advanced Caching

 a) Internet caching

 b) Cooperative caching

6. Concurrency — Classifications

a) Vector processors

 b) SIMD array architectures

c) MIMD architectures

7. Systolic design

8. VLIW/Super-scalar/Super-pipeline

1. Data-flow processing
2. Multithreaded architecture
3. Transactional Memory
4. Multicore architecture

**Administrative:**

 Homework Assignments 10%

 Quizzes 20%

 Project (term Paper) 20%

 Midterm Exam 20%

 Final Exam 30%