INSTRUCTOR:
Asst. Prof. Dr. Gürhan Küçük, office no. A-409, office tel. x1416
Office Hrs. Tue 11:00-11:50, 13:00-13:50 and by appointment, gkucuk@cse.yeditepe.edu.tr

CLASS SCHEDULE:
Tue 14:00-17:00, Room: A-412

TEXT:

WEB-PAGE: [http://www.cse.yeditepe.edu.tr/~gkucuk/courses/cse533](http://www.cse.yeditepe.edu.tr/~gkucuk/courses/cse533)

COURSE DESCRIPTION:
Fundamentals of computer design, instruction set principles, pipelining and pipeline hazards, instruction level parallelism, overcoming pipeline hazards, superscalar, superpipelined processors, memory-hierarchy design, VLIW, CMP, SMT, Dataflow, Multicluster architectures.

TENTATIVE GRADING PLAN:
You will be given 3-5 assignments, programming projects, two midterms and a final exam. Grade distribution:
- Programming Projects: 10%
- Paper Presentation: 10%
- Assignments & Quizzes: 10%
- Final Project: 20%
- Midterm Exam: 20%
- Final Exam: 30%

- Copied assignments will be accepted as **not submitted** for both parties.
- Late submissions of assignments **will not be accepted**: if you don't finish work on schedule, you might as well stop working on it.
- There will be two programming projects. You will also be asked to write a report in a regular paper format at the end of the semester.
- You will also select and present a paper in the class at the end of the semester.
- If you miss a midterm and have a medical report for the day, your midterm weight will be distributed over the final and/or lab work and/or the final project, or you will be given a make up.
- There is no make up for the final exam.

CSE 533 – Course Outline

Week 01: 05/02 Introduction, Technology and Computer Usage Trends
Week 02: 12/02 Measuring and Reporting Performance, Power and Complexity
Week 03: 19/02 Instruction Set Principles, Basic Pipeline Theory
Week 04: 26/02 Pipeline Hazards, Handling Multicycle Operations, Instruction Level Parallelism
Week 05: 04/03 Static Instruction Scheduling
Week 06: 11/03 Dynamic Instruction Scheduling I (CDC6600 Scoreboarding, Tomasulo’s algorithm)
Week 07: 18/03 Dynamic Instruction Scheduling II (Register Renaming)
Week 08: 25/03 Spring Break
Week 09: 01/04 Reducing Branch Penalties
Week 10: 08/04 Midterm Exam
Week 11: 15/04 Superscalar Processors, precise Interrupts in out-of-order processors
Week 12: 22/04 Memory Systems, caches, SRAMs, DRAMs, virtual memory, TLBs
Week 13: 29/04 VLIW, EPIC, SMT, CMP, Dataflow and Multicluster Architectures
Week 14: 06/05 Project Demos
Week 15: 13/05 Paper Presentations