

# Special Topics on Emerging Memory Technologies

**Course Description:** This course will cover the following topics.

- Overview of memory systems
- Cache organization and management
- Cache consistency and implementation issue
- DRAM device organization
- DRAM system organization
- DRAM access protocol
- DRAM controller
- Fully buffered DIMM
- Memory system design analysis
- DISK overview
- DISK performance and Driver interface
- DISK cache layer and testing
- Memory power & error

Throughout the course, students will be asked to apply their understanding of the above topics on exams and term projects. Any graduate students are welcome to this class. You will better understand memory systems.

**Prerequisites:** recommend graduate computer architecture

**Textbook:** Memory Systems cache, dram, disk by Bruce Jacob, Spencer W. Ng, David R. Wang, Morgan Kaufmann

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**Grading Policy:** Final grade will consist of the followings (subject to change).

Two Exams 50%

One lecture-style presentation 15%

Two intermediate reports & presentations 10%

Term paper and final presentation 25%

Attendance 5%

- Projects must be performed alone but you may choose similar topics to your classmates'.
- Project topics must be original; you cannot choose your current research topics performed with your advisor.
- You have to write final reports with your own efforts.