

EC332 - Computer Architecture II General Information

The catalog says this course covers the following:

Pipelining, memory hierarchy, busses, instruction level parallelism, cost-performance tradeoffs, and review of new topics in areas of computer architecture or parallel processing. Team research project. Complements CS 332.

The **goals** of the course are

1. Learn about pipelining.
2. Learn about memory systems.
3. Learn about other issues that affect the performance of a processor.
4. Help students learn to daily pay attention to what's happening in the world.

The **objectives** are:

After successfully completing this course the student should be able to:

1. Understand how pipelining can increase the performance of a processor.
2. Understand the limitations of pipelining. (Hazards such as structural, data, and control).
3. Schedule a pipeline to minimize the effects of such hazards.
4. Understand the effects of the memory system on performance.
5. Know the tradeoffs in designing a memory hierarchy (cache, virtual memory, etc.).
6. Understand the effect the bus has on performance.
7. Know how to find information relating to computer architecture in the current literature (Web, Library, etc.) and write a summary of it.
8. Have the habit of daily tracking what is happening in the ever-changing computer market.

I plan to implement the above by following the book for some parts and following your interests for other.

Fortunately it's a very good book and well worth following.

What is Expected of You

First and foremost, professional work is the norm in this course. All of your written work and your conduct in class are to be at the level of one who is studying a profession – the profession of engineering. This means a number of things:

- Your work is neatly done in a professional manner, using formats specified.
- Your work is honestly done, individually where required, with credit given to the work of others when done in groups.
- Your work is done on time.

The Syllabus lists three different kinds of work that you are expected to perform, reading, problems, and exams. All are important in the course, because all of these work together to help you get a firm grasp of the material. Here is what you can expect:

- Reading assignments are to be completed *before* the class for a given day. Try to understand as much as you can, and be prepared to ask questions in lecture if something isn't clear.
- Problems are assigned from the text, however I haven't selected all your assignments, yet. These are to be done in the format specified. They are always due at the beginning of class on the Monday following the day on which they are assigned (except when an exam intervenes). Late work gets a grade of zero.
- Exams are major tests and take the whole period, hopefully not more. They form a major part of your grade as stated later.

Grading Policy

Your final grade has a number of components and will be weighted by one of the following means:

Homework	15
Project/Class participation	15
Hour Exams	40
Final Exam	<u>30</u>
	100

Homework enables us to identify weaknesses *before* the exam. Your name should appear at the top of each page. Each problem should list the **given** information, the answer to **find**, and your **solution**. In most cases, understanding the concepts is more important than the right answer, however unless you explain your approach it may be difficult to assess your understanding.

Missing and Late Work

You are welcome to miss as much work as you wish or to turn in as much as you wish as late as you choose. The penalties for making these choices are fairly severe, however.

Missed exams cannot be made up.

Missed or late homework may not be graded.

It is much to your advantage to be present and to be on time with your work.

Unclaimed Homework and Handouts

Any unclaimed homework or handouts will be placed in the ece380 bin outside the office (C209).

Memos on Articles

During this class I'll have you read some articles about current processors. These will be weekly readings that are due on Friday. Your memo should contain the following:

- A complete reference to the article you are doing.
- An introduction telling what you are doing. (One or two sentences should be enough.)
- A brief summary of the article.
- Your opinion of article.
- A brief conclusion. (A sentence or two should be plenty.)
- Use a memo format, and don't forget to initial it.

Mark A. Yoder