

Lec-0-Hello

COSC-120, Computer Hardware Fundamentals

Prof. Richard K. Squier, 329 St. Mary's
office hours: 12:30-1:30 Tue/Thu, and by appointment
squier@cs.georgetown.edu
<http://www.cs.georgetown.edu/~squier/Teaching>

Texts:

PP: Patt & Patel, Introduction to Computing Systems 2ed. McGraw-Hill (2004). [REQ.]
HP: Hennessey & Patterson, Computer Organization and Design, Revised 4ed. Morgan-Kaufman (2012).
(required for 121)

Course web sites:

Primary:

<https://svn.cs.georgetown.edu/svn/projects2/120-2012fall/CourseDocuments>

You will want to "svn co" this, but only if you promise not to "svn ci" or do anything else except "svn up". Otherwise, web access is ok, if you keep up to date w/ changes.

Project Materials:

<https://svn.cs.georgetown.edu/svn/projects> (see LC3tools, LC3trunk)

You will want to "svn co" this, but only if you promise not to "svn ci" or do anything else except "svn up". Otherwise, web access is ok, if you keep up to date w/ changes.

Secondary (Read-only, access via a web browser only):

www.cs.georgetown.edu/~squier/Teaching/HardwareFundamentals/120-2012fall-CourseDocuments/

Why this course?

- expected factual knowledge in later courses and employment
- removing superstitious thinking (theories of what goes on in the box)
- analytic skill
- basic skills: tools and their uses
- design/implementation processes, technical and economic motivations
- understanding performance limitations
- preparation for coming changes

Academic Integrity and Grades:

- Whom do you trust to give you reliable information?
 - Scientific knowledge depends on trust?
 - Scientific knowledge depends on skepticism?
- Students are motivated
 - to be as efficient as possible in attaining knowledge (certificates of knowledge)?
 - by teachers/parents/employers via grade expectations
 - by pride (positive and negative)
 - by anger from perceived unfairness (being thwarted)
- Faculty are motivated
 - to be as efficient as possible in delivering knowledge (and assessments)
 - by students/parents/administrators/faculty via grade expectations
 - by pride (positive and negative)
 - by anger from perceived unfairness (being thwarted)

====> Students vs. Faculty? (Its all about grading and efficiency)

I will assess your performance as best I can from:

- class participation (including homework submissions)
- exams
- oral exams based on projects

I will try to avoid basing my assessments on material that has unknown origins. That means:

- Your submitted work will not count toward your grade except as evidence of participation
- Grading your submitted work is intended only to guide you
- You may gather material from any source with or without attribution
- Collaboration is encouraged (and is very important in employment)
- Sharing/teaching is a very efficient way of learning
- Get help as soon as possible, don't get stuck

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Course content:

- PP Chps 1-10, Appendices A, C, and E
 - Documentation in project materials (design/implement a processor)
 - Documentation on course web site
 - Subversion (source code version control, electronic distribution)
 - Electric (system design tool)
 - Verilog (system description/simulation/verification tool)
 - Electronic circuit breadboard (basic component prototype construction)
- (See syllabus)

Course sequence:

- 120: Processors: theory and mathematics, instruction sets, devices, organization, programming
121: Systems: components, organization, performance, hardware/software interface, heirarchy