

Syllabus for CSIT 301: Computer Architecture and Hardware – Spring 2019

Contact Info:

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Office Hours:

Mon. 10:00 - 11:00 (Holroyd 133 or Holroyd 124)

Wed. 10:00 - 11:00 (Holroyd 133 or Holroyd 124)

Fri. 10:00 - 11:00 (Holroyd 133 or Holroyd 124)

Or by appointment

Description:

This course is an introduction to computer architecture and hardware; underlying structures needed to accomplish tasks electronically; and hardware and software architecture components relative to memory management, I/O control, and processing capabilities. The course examines software issues at a level close to the hardware and principles of processor and memory optimization (caching, pipelining, parallelism, etc.)

Section & credits:

Sections: 21

Credits: 3

Meetings (Time and Place): 9:30 – 10:45 in Holroyd 120

Holidays:

MLK: Jan. 21

Spring break: Mar. 11-15

Easter: Apr. 19-22

Other important dates:

Classes start: Jan. 14

Mid-semester grades (for freshmen) due: Mar. 6

Last day to withdraw: Apr. 1

Classes end: May 3

Finals week: May 6 – 10

Course Calendar Link:

<http://www1.lasalle.edu/~blum/c301-cal-s19.htm>

Text:

Computer Organization and Design: The Hardware/Software Interface (ARM Edition) by David A. Patterson and John L. Hennessy, Morgan Kaufmann Publishers

Learning Objectives

Students should be able to:

- Recognize the organizational units of a computer and describe what they do and how they work together.
- Discuss the bottlenecks associated with basic computer architecture and the techniques (such as caching, pipelining, parallelization, etc.) used to circumvent or alleviate these bottlenecks.
- Explain the structure and function of basic computer hardware and peripheral hardware.
- Explain the software-hardware interface (e.g. how an instruction in a high level language program results in a particular hardware activity.)
- Distinguish among various choices within computer instructions including various number representations, opcode-operand ordering, addressing modes, etc.
- Work through the mechanics of error correction and error detection schemes.
- Demonstrate an awareness of some of the current trends in computing with an emphasis on hardware and lower level software.

Assessment:

The components of the course will be weighted as follows

Tests:	54%	3 tests
Final:	18%	Cumulative with some emphasis on any new material.
Assignments:	24%	
Class:	4%	

Or if it is beneficial to the student, the following alternative weighting scheme will be used:

Tests:	36%	lowest test dropped
Final:	36%	
Assignments:	24%	
Class:	4%	

In addition,

- Assignments include homework and labs. They are to be done individually unless explicitly stated otherwise.
- The nature of the material on the test will determine whether the test is written or on the computer and whether it is open-book or closed book. The date of a test will be announced at least one week before it is given.
- If at any time you take information from any source (book, website, etc.), that source should be cited. Failing to do so may be considered plagiarism and thus cheating. Any time you are requested to summarize an article, it is expected that the summary will be in your own words.
- Labs and homework assignments are due a week after they are assigned. Assignments submitted after the test on the relevant material will not be eligible for full credit.

- The plus/minus grading system will be used.
- Attendance will be taken.
- Absences, lateness, etc. will be reflected in the class portion of the grade. More than three unexcused absences may result in the lowering of a grade.
- Make-up tests are given at the discretion of the professor. You have to meet with me to discuss the reason for missing the exam and to schedule a make-up. It may be decided that the missed test will serve as your dropped score (see the second grading scenario above).
- It is the responsibility of the students to keep copies of all submitted materials (tests, homework, labs, and so on) until a final grade is received for the course.

Classroom Behavior:

While in the classroom, students should behave in a manner that is neither distracting to nor disrespectful to the professor or other students. Cell phones should be turned off.

Cheating:

When using materials from a book, website, etc., the source must be cited; otherwise it is considered plagiarism. Claiming another's work as your own is cheating. A student caught cheating will receive a score of zero. Cheating may result in a reduction of the final grade. Repeated cheating can result in a failing grade for the course. Asking another for help on part of a homework is acceptable; handing in duplicate or nearly duplicate work is not. If you require a significant amount of assistance, you should seek my help. Finally, openly allowing your work to be copied is also cheating.

Be aware that if I am called as a job reference, that I may be placed in a position to comment on your trustworthiness and that such questions are phrased like “do you have any reason to ...” rather than “can you prove ...” A bad answer to a question like that can be very detrimental if you are going to be in a position handling sensitive data.

Some Tutoring:

Tutoring for various subject areas (70+ courses) is available for La Salle undergraduates. Subject tutors help students identify what as well as how to learn, clarify course content, and help students understand their strengths and weaknesses regarding the subject matter. Students should take advantage of tutoring at the first indication of difficulty in a course or whenever they wish to improve their performance or knowledge in a course, for example, to improve grades or to maintain high grades. Students can make tutoring appointments through GradesFirst located under Tools in the mylasalle portal.

Student Resources:

<https://lasalle.instructure.com/courses/1772> includes links to
 Student Guide on how to use Canvas
 Student Guide to Resources, Rights and Responsibilities
 Academic Integrity Policy
 American Disabilities Act
 IT Help Desk Support
 Academic and Learning Support Services

Library Resources in Canvas
Library