

Computer Science 330: Computer Architecture and Organization

Syllabus – Spring 2019

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Office Hours: Office hours are listed on the course webpage: matthews.sites.truman.edu. I have an open door policy. Students are always welcome to stop by my office to ask for help, to discuss the class or their course work, or to talk about any other concerns.

Course Description: This course serves as an introduction to digital logic, computer architecture, and assembly language programming.

Text: "Computer Organization and Design: The Hardware / Software Interface", 5th edition, David A. Patterson and John L. Hennessy. ISBN: 978-0-12-407726-3.

Prerequisites: A grade of C or better in CS 250: Systems Programming.

Course Outline: We plan to cover the following topics this semester

- Signed and unsigned int representation, machine instructions, logical operations, implementation of high-level language constructs in assembly language
- Linking and loading
- Gates, logic equations, combinatorial logic, the ALU, clocks, flip-flops, latches
- The data path, pipelining, instruction level parallelism
- The memory hierarchy, caching
- MIPS assembly language, disassembly, procedure calls and recursion in assembly language, interrupt handling

Credit Hours: CS 330 carries three hours of credit. This means that you should expect to spend an average of nine hours per week on this course. These nine hours include attending lectures and exams, reading the textbook, working homework problems, programming, and preparing for exams.

Grading: Students will have the opportunity to earn 1000 points during the semester, distributed as follows:

- Four exams at 125 points each: 500 points
- Three programs at 100 points each: 300 points
- Homework: 200 points

At the end of the semester, grades will be assigned according to the total number of points earned, using the following scale¹:

900 or more points:	A
800 - 899 points:	B
700 - 799 points:	C
600 - 699 points:	D
599 or fewer points:	F

Homework Policy: Sets of homework problems will be given from time to time, and are due at the beginning of the next class period. I will collect some but not all homework for grading. No late homework will be accepted unless prior arrangements are made with the instructor to submit a homework set after the due date.

You are encouraged to collaborate with other members of the class when working homework problems. However, *you must write up all homework solutions that you submit yourself*. No group submissions or submissions that are a duplicate of another person's solutions are allowed, and doing so is considered to be a violation of the academic honesty policy of the course.

Program and Exam Policy: While you are encouraged to discuss the lecture and homework with other members of the class or the academic community, ***any programs or exams that you submit must be solely your own work. Please note that I take this policy very seriously.*** Either giving help to or receiving help from anyone else on a programming project or exam (whether that person is a member of our class or not) is a violation of this policy. Violations will result in a zero on the offending program or exam and may lead to other penalties, including failure of the course, or suspension or expulsion from the university.

Program Submission Policy: Programs are due *at the beginning of class on the due date* unless otherwise announced. Late submissions are penalized 10% of the total possible points if they are turned in after the beginning of class on the due date. Each additional calendar day accrues another 10% penalty. The late clock does not run on days when the university does not hold classes. The only purpose of this policy is to encourage on-time submissions. You should make an effort to submit something for programming assignment, even if it is not on time.

Course Web Page: Copies of class handouts and assignments will be posted on the course webpage sometime after they are distributed in class.

Attendance: The university expects students to attend all classes. If you cannot attend a class meeting, you are still responsible for all material covered during lectures, including handouts and announcements.

¹The instructor reserves the right to deviate from this scale on an individual basis and solely at his own discretion. If such deviations occur, they will never result in a grade lower than the announced scale. They may, however, result in grades higher than indicated by the scale. For example, if you earn 800 points, you are guaranteed a B. If you earn 799 points, however, you may receive a B if the instructor feels a higher grade is merited.

The university categorizes absences from class as either sanctioned or unsanctioned. Sanctioned absences are those where the instructor was informed of the absence before class time, **and** the absence is due to attendance at an official university event, or due to illness or a personal emergency. All other absences are considered to be unsanctioned.

The matrix below explains how absences that occur on days when homework or programming projects are due, or exams are scheduled.

	Sanctioned Absence	Unsanctioned Absence
Homework is due	The student may submit the homework at a pre-arranged time after the due date with no penalty. After the pre-arranged time, the unsanctioned absence penalty will apply.	The homework receives no credit.
A programming project is due	The student may submit the programming project at a pre-arranged time after the due date with no penalty. After the pre-arranged time, the unsanctioned absence penalty will apply.	The late policy listed above applies.
An exam is given	The student may take a makeup exam at a pre-arranged time with no penalty.	The student will be given a 0 on the exam.

Email Correspondence: Often times the easiest way for you to communicate with me is by email. Please understand, however, that even though I teach Computer Science, I do not have a computer permanently attached to my body. Email sent to me outside of normal business hours is unlikely to receive a prompt reply.

Final Exam: Thu. May 9, 1:30 – 3:20 p.m. *The final exam will be given only during the official final exam time.* Keep this in mind when making plans to depart from campus at the end of the semester.

Persons with Disabilities: If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Disability Services office at 660-785-4478 as soon as possible.

Emergency Procedures: In each classroom on campus, there is a poster of emergency procedures explaining best practices in the event of an active shooter, hostile intruder, fire, severe weather, bomb threat, power outage, or medical emergency. This poster is also available as a PDF at this link: <http://police.truman.edu/files/2015/12/Emergency-Procedures.pdf>.



Students should be aware of the classroom environment and note the exits for the room and building. For more detailed information about emergency procedures, please consult the Emergency Guide for Academic Buildings: <http://police.truman.edu/emergency-procedures/academic-buildings/>

This six-minute video provides some basic information on how to react in the event there is an active shooter in your location: <http://police.truman.edu/emergency-procedures/active-shooter/active-shooter-preparedness-video/>

Truman students, faculty, and staff can sign up for the TruAlert emergency text messaging service via TruView. TruAlert sends a text message to all enrolled cell phones in the event of an emergency at the University. To register, sign in to TruView and click on the “Truman” tab. Click on the registration link in the lower right of the page under the “Update and View My Personal Information” channel on the “Emergency Text Messaging” or “Update Emergency Text Messaging Information” link. During a campus emergency, information will also be posted on the TruAlert website <http://trualert.truman.edu/>.