CSCI 16000 §01 #3857 Fall 2024

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Text The text book for this class is *Digital Design,* 5^{th} *edition* by M. Morris Mano & Michael D. Ciletti; Pearson Prentice Hall, 2012, ISBN10: 0132774208. Earlier or later editions are fine, but you may not have the "right" home work problems.

Web: Useful links, including an updated version of this syllabus and all the home work assignments, are available on `http://www.cs.hunter.cuny.edu/~eschweit/`.

Quizzes and exams will be scanned into GradeScope (`www.gradescope.com`). Your grades will be available there. The instructor will create accounts based on your CUNYfirst data. Be sure to check your "myhunter" account for email from GradeScope after the first week of class.

Your Instructor
I can be reached to make appointments etc. by contacting me before or after class, by phoning my office at (212)772-4349, by stopping up at my office (1000E North) during scheduled office hours (Mondays and Thursdays 2:00 - 3:00), or any other time I'm there, or (by far the best way) by sending me e-mail at eric.schweitzer@hunter.cuny.edu. Please note that I will only read plain `ASCII text` email, not HTML or MS Word encoded documents. Also note that any email concerning anything that might fall under FERPA regulations (e.g. questions about grades or other class related issues) *must* be sent from your "myhunter" account.

In addition, messages can be left for me at the Computer Science Department office, which is located in N-1008 and is reachable at (212)772-5213.

Grades Grades will be based on a final exam and approximately twelve to fifteen quizzes.

- The quizzes will take place some time during randomly selected classes. Each quiz is worth 10 points, the conglomeration of which will total to 60% of your grade (no matter how many quizzes there actually are). Missed quizzes can not be made up. Unless you request otherwise, your ten best quiz grades will be used. (You have an option to choose quiz grades that are less than your best, not an option to choose fewer than 10.) Thus, you can miss at least two quizzes for any reason. Depending on difficulty you will have 5 to 10 minutes to finish the quiz. If you arrive after the quiz starts, you will have until the quiz ends to finish.
- The Final will be given at the appointed hour during finals week. This is currently Tuesday, December 17 from 5:20 to 7:20, however the College may change this schedule. The Final will be 40% of your grade.
- You may not access or use any communication devices (including but not limited to a cell phone, computer, embedded brain chip or passed note) during exams and quizzes.
- I do not give "extra credit" assignments. Do not expect to be able to pull up your grade by submitting additional work.

Home Work Home work will be assigned but not collected or graded. You are not required to do it, however you should be aware that quizzes and the final exam will be similar to the homework questions. If you want to prepare for these evaluations, you should do the homework and, if you have any problems doing them, ask a tutor. You will not master this material if you don't work through these problems by yourself.

Topics, Goals, Outcomes: This is a foundational class in the circuitry underlying a modern digital computer. To succeed, you will need to understand a few abstract concepts (like boolean logic and finite state machines) but there is nothing difficult here. The bulk of your work will be on mundane tasks, working through algorithms and constructing tables and diagrams from the results of those algorithms. Unlike programming classes, there are no hard problems (just tedious ones) and no need for briliant insights.

We will spend the semester learning how to design digital circuits as used in modern computing devices. After a review of logic, binary numbers, and boolean algebra (Chs 1 & 2), we will discuss gate level implementation and minimization (Ch 3), and various specific combinational circuits (Ch 4). From here we move to a study of synchronous sequential logic (Ch 5), various types of registers and counters (Ch 6), and various types of memory (Ch 7). Time permitting, we will also look at the register transfer level (Ch 8).

This class supports the Department's Program Learning Outcome 1B (demonstrating an understanding of the overarching relationships between hardware and software) as well as starting students on the road to 1C (knowledge of finite automata). The successful student will be able to implement any combinational circuit with any complete set of gates and any sequential circuit with any type of flip-flop. Abstraction will be reinforced through the use of sub-circuitry to implement more useful circuits (e.g. using half adders to build adders which are then used to build n-bit adder-subtracters).

Policy on Academic Integrity: Hunter College regards acts of academic dishonesty (e.g. plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.

Policy on Bullying: Bullying, cyberbullying, online hate, intimidation, threats, harassment, and pressure to share schoolwork are all forms of violence. CUNY holds a zero tolerance stance towards all such acts. The University is committed to prevention of any form of bullying, will respond promptly to threats and/or acts, and will protect victims of bullying from retaliation. As a criminal matter, the New York Attorney General defines cyberbullying as the use of email, websites, instant messaging, chat rooms, text messaging and digital cameras to antagonize and intimidate others. Disrupting a teleconferencing platform (such as Zoom/Skype/Blackboard Collaborate Ultra) is a federal crime.

ADA Compliance: In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical and/ or Learning) consult the Office of AccessABILITY located in Room E1124 to secure necessary

academic accommodations. For further information and assistance please call (212-772-4857)/TTY (212-650-3230).

Personal Protective Equipment and other disease related matters: Whatever rules CUNY or Hunter put in place will be enforced. Remember that these rules can change with little warning.

Cell Phones and other Electronics: I expect all cell phones, pagers, etc. to be inaudible during class. I expect laptops and other electronic devices, if used, to be used only for class related activities. Activities not related to class include but are not limited to facebook, twitter, other social networking web sites, "surfing", email, mu*s, hulu, southparkstudios, etc. Any student with an electronic device that disrupts the class or is used for anything other than class related activities will lose two (2) points from their final average (per occurrence). Anyone found using such a device during a quiz or exam will receive a 0 on that quiz or exam and will be reported to the Dean of Students.

Hunter College Policy on Sexual Misconduct In compliance with the CUNY Policy on Sexual Misconduct, Hunter College reaffirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationships. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College.
a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, or contacting the College's Public Safety Office (212-772-4444).
b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the College's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) or Colleen Barry (colleen.barry@ hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123. CUNY Policy on Sexual Misconduct Link:
`https://www.cuny.edu/wp-content/uploads/sites/4/page-assets/about/administration/offices/ovsa/policies/Sexual-misconduct-8.30.18-PSM-2018-005.pdf`

Note that details of this document are subject to change if the need arises.