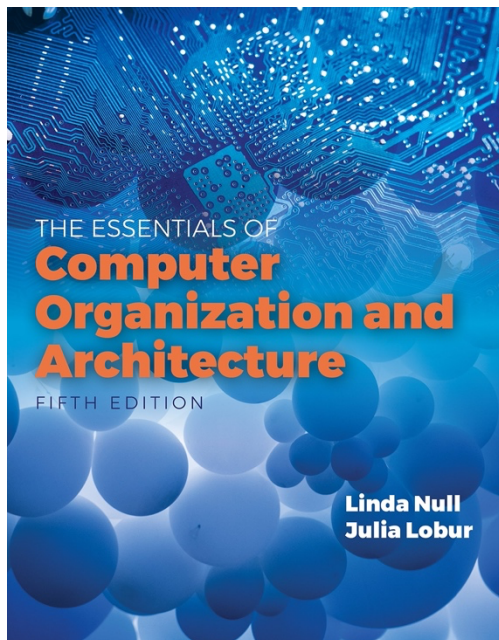# Principles of Computer Architecture– CISC 3310 TY2 – Fall 2022

Course Information:

Instructor Information:

Instructor	:	**Vivek Sharma**
		Whitehead 519 Tue 2:15pm – 3:30pm
Classroom	:	
		Whitehead 519 Thu 1:25pm – 3:30pm
Office location	:	TBA
Office Hours	:	**Tue 1:10pm -2:10pm** or **by appointment**
Email	:	vsharma [at] gradcenter [dot]cuny[dot] edu

Title: The Essentials of Computer Organization and Architecture | Fifth Edition
Author: Linda Null, Julia Lobur
ISBN-13: 978-1284123036
ISBN-10: 1284123030
Publisher: Jones & Bartlett Learning; 5th edition
Language: English
Paperback: 744 pages
Item Weight: 3.13 pounds
Dimensions: 7.7 x 1.8 x 9.2 inches

Introduction to digital logic. Basic digital circuits. Boolean algebra and combinational logic, data representation and transfer, digital arithmetic. Instruction sets. Introduction to assembly languages: ALU and memory reference instructions, flow control. Memory. I/O systems. Performance.

Course Objectives: After successful completion of this course, students will have a thorough understanding of the structure and behavior of computer systems and the logical and abstract aspects of system implementation as seen by the programmer.

Course Requirements:

Materials will be shared on blackboard and the course website
www.bit.ly/computerarchitecture

This course follows a Zero-textbook OER concept. But if you still require a book (you may buy it or lend it from the library, see below)

Course Textbooks (optional):

"The Essentials of Computer Organization and Architecture" Fifth Edition, Linda Null, Julia Lobur.
Jones & Bartlett Learning
You can purchase or rent the textbook or e-textbook from the bookstore at:
https://brooklyn.textbookx.com/book/9781284123036

Course Overview:

Course Topics

1. Overview of computer system and its history
2. Data Representation in Computer System
3. Boolean Algebra & Digital Logic
4. MARIE
5. Memory Organization
6. I/O

Course Structure:

Assignments:

There will be frequent assignments and quizzes during the semester covering the topics discussed in class, from the textbook. Some important points to remember:

- Assignment solutions must be legible: Difficult-to-read solutions may be marked off or may not be graded entirely.
- Typed assignment is required. Use either MS word, Google Docs or Libre office suite to type your assignment.
- **No late assignment accepted.**

Attending class is mandatory and attendance will be taken at the beginning of every meeting. Students arriving after class has begun, will receive half credit for attendance for that day. This rule does not apply to absences due to religious observances, as described in the Undergraduate Bulletin.

Exams: There will be a midterm and a final exam. Exam and quiz format will be discussed in class. *Overlapping with other exams will not be entertained.*

Online Resources: Slides, assignments, and supplement reading material will be posted on the course blackboard site.

Class Grading:
Attendance and Class participation: 10%
Midterm: 20%
Final Exam: 30%
Assignments & Quiz: 40%

LECTURE, LABORATORY, AND EXAMINATION SCHEDULE
Students should prepare to spend at least 2-6 hours per assignment on this material. This does not include studying for exams. If you do not have enough time, do not take the course. Do not kid yourself!
Each of the areas of study will be reviewed in assignments and asked in class quiz. The frequency of assignments is one in a month and quiz is one in two month. You will also receive an email from me with information and possibly additional requirements
for each assignment. Please be sure to read the instructions carefully before you begin the assignment.
Regarding assignments
Each assignment must be submitted via blackboard submission, the day it is due. Any assignment received after the deadline will be penalized 50%. Assignments should be submitted on blackboard in the required format, no other format will be accepted.
Within 2-3 days of each assignment submission, you will receive your grade and suggestions for improvement (if any). Do not resubmit the assignment once the grade has been assigned.

Make sure your name, student ID, and homework number appear in the upper-left corner of both the electronic and hard copies (if any). If an exercise has multiple sheets, then sequence it according to the order of the exercise. Disorganized assignments will receive zero points.
The faculty and administration of Brooklyn College support an environment free from cheating and plagiarism. Each student is responsible for being aware of what constitutes cheating and plagiarism and for avoiding both. The complete text of the CUNY Academic Integrity Policy and the Brooklyn College procedure for policy implementation can be found at www.brooklyn.cuny.edu/bc/policies. If a faculty member suspects a violation of academic integrity and, upon investigation, confirms that violation, or if the student admits the violation, the faculty member MUST report the violation. Students should be aware that faculty may use plagiarism detection software.

The golden rules of email correspondence

- Check your email daily.
- ALWAYS put <yourname> IN THE SUBJECT. It's not realistic to expect your instructors to remember the handles of dozens of students and who may be hiding behind flatbush-prince-ofdarkness@blahblahblah.com. If you have a "funny"; email address, you should consider getting a professional-looking email address. A common format is your first name's initial followed by the last name. As an alternative you could use your last name followed by three or more digits that are easy to remember (street address, part of telephone number, etc.)
- Email is a FORMAL means of communication (at least when you correspond with your professors or employers, etc.). Avoid abbreviations, slang, and cuteness. Let's treat each other with respect. Use capital letters, punctuation, greetings, and salutations as in a professional message.
- The use of magic words (please, thank you) and politeness in general is strongly encouraged.
- Sign every message at the bottom. Why? Because it is GOOD MANNERS and if it is a long message, the reader doesn't have to scroll up to check who the sender is (even profs suffer from ADD, sometime.).
- Exchange phone numbers or email addresses with more than one classmate. Please do not write to let your instructors know that you were not in class (they already know) or will miss class; to ask them to summarize what s/he did or will do in class; or what the assignment is/was. Email a classmate instead.
- Email your instructors only for SERIOUS AND MOTIVATED REASONS.

Important Dates:

8/25/22: First day of class
9/27/22: No classes scheduled
9/29/22; Follow Monday schedule
10/4/22: No classes scheduled
10/25/22: Tentative midterm
11/24/22: No classes scheduled
12/13/22: Revision class
12/20/22 : Tentative final exam
University Policy on Academic Integrity:

Student Conduct: Any acts of disruption that go beyond the normal rights of students to question and discuss with instructors the educational process relative to subject content will not be tolerated, in accordance with the Academic Code of Conduct described in the Student Handbook.
Electronic Devices in Class Policy: Cellular telephones, pagers, CD players, radios, and similar devices are prohibited in the classroom and laboratory facilities. Calculators and computers are prohibited during examinations, unless specified.
Examination Policy: A midterm and final examination will be given in class. Please schedule your other activities in advance. No make-up exams will be allowed. To prepare for examinations, do the assignments and read the chapters. 100 % of the questions are taken directly from the reading material. Review the Quick Reference Summary at the back of the book for the application on which you are being tested. Access student data files and other study tools on cengagebrain.com. The examinations consist of multiple choice and true/false questions. Sample questions with answers are available online. See the address given at the end of each chapter in the textbook. You are urged to study by taking these sample examinations prior to sitting for the midterm and final.

Incomplete Policy: Students will not be given an incomplete grade in the course without sound reason and

documented evidence in writing. In any case, for a student to receive an incomplete, he or she
must be passing and must have completed a significant portion of the course.

Cheating Policy: Students are expected to uphold the school's standard of conduct relating to academic honesty.
Students assume full responsibility for the content and integrity of the academic work they
submit. The guiding principle of academic integrity shall be that a student's submitted work,
examinations, reports, and projects must be that of the student's own work. Students shall be
guilty of violating the college's policy if they:
1. Represent the work of others as their own.
2. Use or obtain unauthorized assistance in any academic work.
3. Give unauthorized assistance to other students.
4. Modify, without instructor approval, an examination, paper, record, or report for the purpose
of obtaining additional credit.
5. Misrepresent the content of submitted work.
Any student violating the college's academic integrity policy is subject to receive a failing grade
for the course and will be reported to the Office of Student Affairs. If a student is unclear about
whether a particular situation may constitute violation, the student should meet with the
instructor to discuss the situation.
For this class, it is permissible to assist classmates in general discussions of computing
techniques. General advice and interaction are encouraged. Each person, however, must develop
his or her own solutions to the assigned projects, assignments, and tasks. In other words, students
should not "work together"; on graded assignments, unless asked to. Such collaboration constitutes cheating. A student should not use or copy
(by any means) another's work (or portions of it) and represent it as his/her own. If you need help on an assignment, contact your instructor, not
other classmates.

Disabilities Policy: In compliance with the Americans with Disabilities Act (ADA), all qualified students enrolled in
this course are entitled to "reasonable accommodations." Please notify the instructor during the
first week of class of any accommodations needed for the course.

TUTOR ASSISTANCE: Tutors are available in the Learning Center.

CONSULTANT ASSISTANCE: Consultants in the open lab are on duty to assist you with hardware and software problems. If
your computer malfunctions or your printer is out of paper, go to the main desk and ask a
consultant for help. The consultants are not laboratory assistants and, therefore, are not
responsible for answering specific laboratory homework questions.

Center for Student Disability Services: The Center for Student Disability Services (CSDS) is currently working remotely. In order to receive
disability-related academic accommodations students must first be registered with CSDS. Students who have a documented disability or suspect
they may have a disability are invited to schedule an interview by calling (718) 951-5538 or emailing testingcsds@brooklyn.cuny.edu. If you
have already registered with CSDS, email Josephine.Patterson@brooklyn.cuny.edu or testingcsds@brooklyn.cuny.edu to ensure the
accommodation email is sent to your professor.

Non-Attendance because of religious beliefs: : The New York State Education Law provides that no student shall be expelled or refused
admission to an institution of higher education because he or she is unable to attend classes or participate in examinations or study or work
requirements on any particular day or days because of religious beliefs. Students who are unable to attend classes on a particular day or days
because of religious beliefs will be excused from any examination or study or work requirements. Faculty must make good-faith efforts to
provide students absent from class because of religious beliefs equivalent opportunities to make up the work missed; no additional fees may be
charged for this consideration.
If classes, examinations, or study or work requirements occur on Friday after 4 p.m. or on Saturday, similar or makeup classes, examinations, or
study or work requirements will be made available on other days, where possible and practical. The faculty and the administration will not allow
any adverse or prejudicial effects to accrue to students availing themselves of this regulation. If students have complaints about the application of
this policy, they are entitled to bring action or a proceeding for enforcement of their rights in the Supreme Court of Kings County.
The New York State Education Law provides that no student shall be expelled or refused admission to an institution of higher education because
he or she is unable to attend classes or participate in examinations or study or work requirements on any particular day or days because of
religious beliefs. Students who are unable to attend classes on a particular day or days because of religious beliefs will be excused from any
examination or study or work requirements. Students absent from class because of religious beliefs will be provided with equivalent opportunities
to make up the work missed; no additional fees may be charged for this consideration.
More information can be found at:
http://www.brooklyn.cuny.edu/web/off_registrar/2020-2021_Undergraduate_Bulletin.pdf

Student Bereavement Policy: Students who experience the death of a loved one must contact the Division of Student Affairs, 2113 Boylan
Hall, 718.951.5352, studentaffairs@brooklyn.cuny.edu, if they wish to implement either the Standard Bereavement Procedure or the Leave of
Absence Bereavement Procedure (see below). The Division of Student Affairs has the right to request a document that verifies the death (e.g., a
funeral program or death notice).
Typically, this death involves that of a family member, in parallel to the bereavement policy for faculty and staff. However, it is up to the
discretion of the Division of Student Affairs to determine if a death outside of the immediate family warrants implementation of the student
bereavement policy.
Immediate family shall be defined as spouse; natural, foster, or stepparent; grandchild; mother- in-law; father-in-law; natural, foster, or
stepbrother; natural, foster, or stepsister, natural, foster, or stepchild or any relative residing in the same household, the domestic partner of the
student and a child or parent of the domestic partner or any other relative of the domestic partner living in the same household.
More information can be found at:
http://www.brooklyn.cuny.edu/web/about/initiatives/policies/bereavement.php