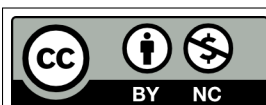


Abridged Syllabus: Principles of Computer Architecture

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1 Details

Course & Section:	<i>Principles of Computer Architecture</i> , CISC 3310, MY0
Days & Time:	Mondays, Wednesdays (MoWe), 10:35 AM – 12:15 PM
Location:	Ingersoll Hall Extension, Room 525 (IA-525 in short)
Instructor:	Miriam Briskman
E-mail:	miriam.briskman@brooklyn.cuny.edu
Response Time:	Within 24 – 48 hours, between 12 PM to 9:30 PM
Office Hours:	Wednesdays, 07:30 PM – 09:30 PM, online through Zoom. You can find the link on Brightspace, in Content → Office Hours. Alternatively, please email the instructor to schedule an appointment.
Course Materials:	[Free] <i>Computer Organization with MIPS</i>, by Seth Bergmann. Link: https://rdw.rowan.edu/cgi/viewcontent.cgi?article=1008&context=oer. [Free] <i>Computer Organization and Design Fundamentals Series</i>, by David Tarnoff. Link: https://dc.etsu.edu/etsu-oer/6/. [Free] <i>MARIE.js, A Basic CPU Simulator</i>, by Jason Nyugen, Saurabh Joshi, and Eric Jiang. Link: https://marie.js.org/. [Free] <i>NASM - The Netwide Assembler: Manual</i>, by Tatham et al. Link: https://www.nasm.us/doc/. Note: This course uses only free, open-source materials.
Prerequisites:	(CISC 1110 (Introduction to Programming Using C++) or CISC 1115 (Introduction to Programming Using Java) or (both CISC 1113 (Basic Principles of Java Programming with Science Applications I) and CISC 1114 (Basic Principles of Java Programming with Science Applications II)) or CISC 1170 (Java for Programmers) or CISC 1180 (Introduction to C++ for Programmers)) and CISC 2210 (Introduction to Discrete Structures)
Tools/Resources:	Brightspace; Access to a computer (OS doesn't matter); Adobe Acrobat Reader DC

1.1 Course Description

(4 credits) 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, subroutine linkage, arrays and structures. Memory. I/O systems. Performance. Relationship between software and architecture. (Taken from CUNYFirst.)

1.2 Course Objectives

By the end of this course, you will master the following skills:

- Learning of digital design, Boolean algebra, and logical gates.
- Understanding of computer representation of numbers/characters, and practice with arithmetic computer calculations.
- Familiarity with a simple computer: MARIE's architecture.
- Discussion of computer memory organization and I/O methods.
- Hands-on practice with an assembly language, and recognition of its way of control of computer hardware.
- Introduction to the CISC 3320 (Operating Systems) course.
- Independent searching and verbal expression of answers based on given sources or your opinion.

Please refer to the Required Electronic Tools and Resources section at the end of the full version of the syllabus for information about how to obtain the software required for this course (for free, of course.)

2 Grading Components

The course's grade is influenced by the following components:

Attendance	15%
Participation	30%
Midterm	35%
Final	20%
Extra Credit	5%

3 Grades

Students will receive a letter grade for the course according to the following score distribution established by CUNY:

<60	60-62	63-66	67-69	70-72	73-76	77-79	80-82	83-86	87-89	90-92	93+
F	D-	D	D+	C-	C	C+	B-	B	B+	A-	A

A grade of A+ will be granted for numerical grades of 97 or higher after all extra credit points you received are applied to the grade.

4 Important Brooklyn College Policies

4.1 Center for Student Disability Services

The Center for Student Disability Services (CSDS) is committed to ensuring students with disabilities enjoy an equal opportunity to participate at Brooklyn College. 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 Josephine.Patterson@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.

If the CSDS decides that you are eligible for a time extension on exams (such as time-and-a-half or double-time,) you will still take the exam with the rest of the class at the day + time that is listed in the Schedule section below and will be fully accommodated: you will receive the time extension you are eligible for. That is, you won't take the exam at the CSDS test center.

4.2 Nonattendance Because of Religious Beliefs

The Brooklyn College undergraduate Bulletin for the years 2025 – 2026 states:

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.

Based on the description above, if you are incapable of attending a class because of religious observance, you should e-mail the instructor at least 48 hours before that class so that proper accommodations could be made. If this is an exam day, we will schedule a make-up exam when it is convenient to you, and if an assignment is due, the due date will be extended, and the instructor will tell you when the new due date is.

4.3 Brooklyn College Policy on Academic Integrity

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 can be found at this site:

<https://www.cuny.edu/about/administration/offices/legal-affairs/policies-resources/academic-integrity-policy/>

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.

This means that if you cheat on a test or assignment, the instructor of this course **MUST file a report which will initiate academic penalties. Additionally, the assignment in which you cheat will get an unfortunate score of 0.**

4.4 Brooklyn College Bereavement Policy

Students who experience the death of a loved one should refer to:

<https://www.brooklyn.edu/policies/bereavement/>

4.5 Brooklyn College Library

New student? Returning to campus? Looking for materials for your class or research? Check out the plethora of resources that the Brooklyn College Library is providing to you:

<https://library.brooklyn.cuny.edu/resources/>

You will certainly find something useful there!

4.6 More Information: Bulletin

For more information about the policies of Brooklyn College and other essential information, please refer to the Bulletin, which you can find on the following web-page:

<https://www.brooklyn.edu/registrar/bulletins/>

5 Important Dates

August 28 (Fr): Start of Fall 2026 Term

August 31 (Mo): First lecture of CISC 3310, section MY0

September 03 (Th): Registrar drops everyone waitlisted for Fall 2026 courses

September 03 (Th): Last day to add a course

September 07 (Mo): Labor Day: College Closed

September 11 – 13 (Fr – Su): No classes scheduled

September 18 (Fr): Grade of W is assigned for officially withdrawing from a course

September 21 (Mo): No classes scheduled

October 12 (Mo): Columbus Day: College Closed

October 13 (Tu): Conversion Day: Classes follow Monday schedule

November 06 (Fr): Last day to withdraw from a course with a grade of W

November 08 (Su): No classes scheduled

November 25 (We): Thanksgiving Eve: No classes scheduled

November 26 – 27 (Th – Fr): Thanksgiving: No classes scheduled

November 28 (Sa): Thanksgiving: No classes scheduled

December 14 (Mo): Last day of classes!

December 15 – 21 (Tu – Mo): Week of Final Examinations for the Fall 2026 Term

December 28 (Mo): Fall 2026 Course Grades will be Posted on CUNYfirst by 11:59 PM.

Please refer to the Brooklyn College Academic Calendar for the Fall 2026 semester to view other important dates not mentioned above:

<https://www.brooklyn.edu/registrar/academic-calendars/#fall>

6 Schedule

Note that the schedule below is tentative; if changes are made, the instructor will notify you and will post the updated syllabus/schedule on Brightspace.

Week	Date	Topics, Exams, and Assignment Deadlines
1	08/31 (Mo)	Welcome! Syllabus Review • Read the Abridged Syllabus <u>before</u> this lecture
	09/02 (We)	Topic 1: Intro to Computer Architecture • Read slides 1 – 22 of Topic 1, inclusively, <u>before</u> this lecture
2	09/07 (Mo)	College Closed: No CISC 3310, MY0 lecture!
	09/09 (We)	Topic 1: Intro to Computer Architecture – Cont' • Read slides 23 – 41 of Topic 1, inclusively, <u>before</u> this lecture
3	09/14 (Mo)	Topic 2: Data Representation • Read slides 1 – 17 of Topic 2, inclusively, <u>before</u> this lecture
	09/16 (We)	Topic 2: Data Representation – Cont' • Read slides 18 – 40 of Topic 2, inclusively, <u>before</u> this lecture
4	09/21 (Mo)	No classes scheduled: No CISC 3310, MY0 lecture!
	09/23 (We)	Topic 2: Data Representation – Cont' • Read slides 41 – 60 of Topic 2, inclusively, <u>before</u> this lecture
5	09/28 (Mo)	Topic 3: Boolean Algebra & Logic Gates • Read slides 1 – 22 of Topic 3, inclusively, <u>before</u> this lecture
	09/30 (We)	Topic 3: Boolean Algebra & Logic Gates – Cont' • Read slides 23 – 42 of Topic 3, inclusively, <u>before</u> this lecture
6	10/05 (Mo)	Topic 3: Boolean Algebra & Logic Gates – Cont' • Read slides 43 – 59 of Topic 3, inclusively, <u>before</u> this lecture
	10/07 (We)	Topic 4: Circuits • Read slides 1 – 17 of Topic 4, inclusively, <u>before</u> this lecture

Week	Date	Topics, Exams, and Assignment Deadlines
7	10/12 (Mo)	College Closed: No CISC 3310, MY0 lecture!
	10/13 (Tu)	Conversion Day: We have a lecture today! Topic 4: Circuits – Cont' • Read slides 18 – 35 of Topic 4, inclusively, <u>before</u> this lecture
8	10/14 (We)	Topic 5: Computer Instructions • Read slides 1 – 19 of Topic 5, inclusively, <u>before</u> this lecture
9	10/19 (Mo)	Topic 5: Computer Instructions – Cont' • Read slides 20 – 36 of Topic 5, inclusively, <u>before</u> this lecture
	10/21 (We)	Topic 5: Computer Instructions – Cont' • Read slides 37 – 49 of Topic 5, inclusively, <u>before</u> this lecture
10	10/26 (Mo)	Topic 5: Computer Instructions – Cont' • Read slides 50 – 70 of Topic 5, inclusively, <u>before</u> this lecture
	10/28 (We)	Topic 6: MARIE: Architecture Example • Read slides 1 – 12 of Topic 6, inclusively, <u>before</u> this lecture
11	11/02 (Mo)	Topic 7: Memory • Read slides 1 – 22 of Topic 7, inclusively, <u>before</u> this lecture
	11/04 (We)	Midterm Exam: 10:35 AM – 12:15 PM, at room TBA
12	11/09 (Mo)	Topic 7: Memory – Cont' • Read slides 23 – 43 of Topic 7, inclusively, <u>before</u> this lecture
	11/11 (We)	Topic 7: Memory – Cont' • Read slides 44 – 61 of Topic 7, inclusively, <u>before</u> this lecture
13	11/16 (Mo)	Topic 8: I/O • Read slides 1 – 17 of Topic 8, inclusively, <u>before</u> this lecture
	11/18 (We)	Topic 8: I/O – Cont' • Read slides 18 – 41 of Topic 8, inclusively, <u>before</u> this lecture
14	11/23 (Mo)	Topic 9: Intro to Assembly Language • Read slides 1 – 15 of Topic 9, inclusively, <u>before</u> this lecture
	11/25 (We)	No classes scheduled: No CISC 3310, MY0 lecture!
15	11/30 (Mo)	Topic 9: Intro to Assembly Language – Cont' • Read slides 16 – 41 of Topic 9, inclusively, <u>before</u> this lecture
	12/02 (We)	Topic 9: Intro to Assembly Language – Cont' • Read slides 42 – 58 of Topic 9, inclusively, <u>before</u> this lecture
16	12/07 (Mo)	Topic 10: Performance & Architecture Types • Read slides 1 – 10 of Topic 10, inclusively, <u>before</u> this lecture
	12/09 (We)	Topic 10: Performance & Architecture Types – Cont' • Read slides 11 – 25 of Topic 10, inclusively, <u>before</u> this lecture

Week	Date	Topics, Exams, and Assignment Deadlines
17	12/14 (Mo)	Topic 11: Intro to Operating Systems • Read slides 1 – 22 of Topic 11, inclusively, <u>before</u> this lecture
Finals	TBA	Final Exam: TBA, at room TBA

– End of CISC 3310 Abridged Syllabus –