Abridged Syllabus: Operating Systems

Contents

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1 Details

Course & Section:	*Operating Systems,* CISC 3320, MW3
Days & Time:	Mondays, Wednesdays (MoWe), 03:40 PM – 04:55 PM
Location:	Old Ingersoll Hall, Room 1141 (IH-1141 in short)
Instructor:	Miriam Briskman
E-mail:	briskman@sci.brooklyn.cuny.edu
Response Time:	Within 25 hours on weekdays and 29 hours on weekends
Office Hours:	Mondays, 07:00 PM – 09:00 PM, online through Blackboard. Alternatively, please email me to schedule an appointment.
Course Materials:	[Free] *Computer Science from the Bottom Up*, by Ian Wienand. Link: https://www.bottomupcs.com/csbu.pdf. [Free] *Course Notes for "Operating Systems"*, by Professor John Bell. Link: https://www.cs.uic.edu/~jbell/CourseNotes/OperatingSystems/index.html. [Free] *Operating Systems and Middleware: Supporting Controlled Interaction*, by Max Hailperin. Link: https://gustavus.edu/mcs/max/os-book/osm-rev1.3.1.pdf. **Note**: This course uses only free, open-source materials.
Prerequisites:	CISC 3130 (Data Structures); and CISC 3305 (Computer Organization); or CISC 3310 (Principles of Computer Architecture); or CISC 3315 (Digital Computer Systems)
Tools/Resources:	Blackboard; Access to a computer (OS doesn't matter); Adobe Reader DC

1.1 Course Description

`(3 hours; 3 credits) Design and implementation of operating systems for large computers. Multiprogramming, multiprocessing, time sharing. Resource allocation and scheduling. Communications, conversational computing, computer networks. Memory protection, interrupts, segmentation, paging, and virtual memories.` (Taken from CUNYFirst.)

1.2 Course Objectives

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

- Familiarity with the functions and tasks of an operating system and the development history of current techniques.
- Understanding process handling, including interrupts, CPU scheduling, processes and threads, inter-process communication, semaphores, and deadlock.

- Understanding primary and secondary storage management, including memory management, multiprogramming, and virtual memory.
- Definition and appreciation of a computer's security and protection.
- 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	10%
Participation	15%
Homework	20%
Midterm	25%
Final	30%
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 Keeping Our Community Safe

Below (Figure 4.1) is a brochure summarizing Brooklyn College's guidelines regarding Covid-19 and feeling sick. Remember you'll either get full credit for missed assignments or a sufficient extension to submit missing work if you notify me about the situation via email, so don't hesitate to act to keep our community safe!

The link to the **COVID-19 Case Collection Form** is https://www.brooklyn.cuny.edu/web/about/initiatives/initiatives/return/resources/case-collection-form.php.

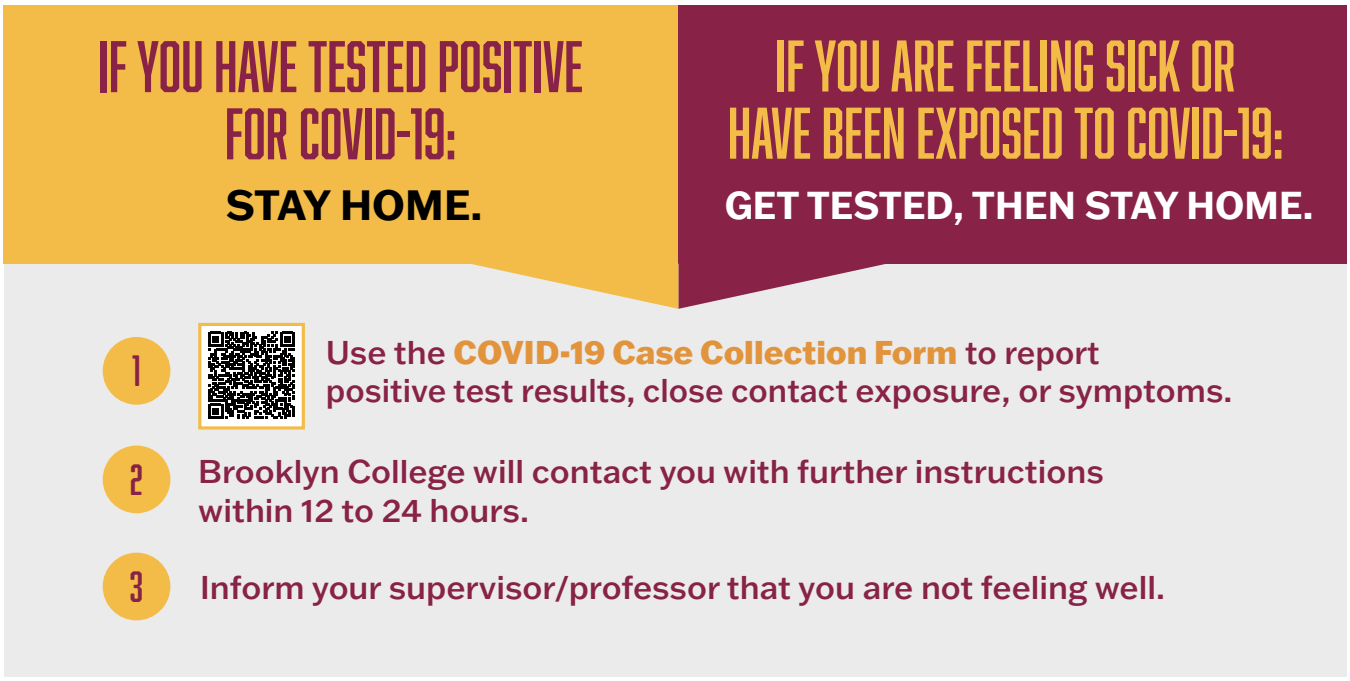

Figure 1: Covid-19 Infographic: What to do if you got Covid or feel sick. (Credit: Brooklyn College)

4.2 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.

4.3 Nonattendance Because of Religious Beliefs

The Brooklyn College undergraduate Bulletin for the years 2022 – 2023 states:

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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.
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Based on the description above, if you are incapable of attending a class because of religious observance, you should e-mail me 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 I will tell you when the new due date is.

4.4 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 and the Brooklyn College procedure for implementing that policy can be found at this site: https://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.

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

4.5 Brooklyn College Bereavement Policy

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

https://www.brooklyn.cuny.edu/web/about/initiatives/policies/bereavement.php

4.6 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!

4.7 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.cuny.edu/web/about/administration/enrollment/registrar/bulletins.php

5 Important Dates

January 25 (We): Start of Spring 2023 Term
January 25 (We): First lecture of CISC 3320, section MW3
January 31 (Tu): Last day to add a course
February 12 – 13 (Su – Mo): No classes scheduled
February 15 (We): Grade of W is assigned for officially withdrawing from a course
February 20 (Mo): No classes scheduled
February 21 (Tu): Conversion Day: Classes follow Monday schedule
April 05 – 13 (We – Th): Spring Recess
May 12 (Fr): Reading Day
May 16 (Tu): Last day to withdraw from a course with a grade of W
May 17 – 23 (We – Tu): Week of Final Examinations for the Spring 2023 Term

Please refer to the Brooklyn College Academic Calendar for the Spring 2023 semester to view other important dates not mentioned above:

https://www.brooklyn.cuny.edu/web/about/administration/enrollment/registrar/bulletins/Spring23/calendar.php

6 Schedule

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

All assignments, excluding the exams, are due at 11:59 PM EST, on Blackboard.

Week	Date	Topics, Exams, and Assignment Deadlines
1	01/25 (We)	**Welcome!** Syllabus Review
2	01/30 (Mo)	Topic 1: Overview of operating systems
	02/01 (We)	Topic 1: Overview of operating systems – Cont'
3	02/06 (Mo)	Topic 2: Functions & Services of an OS
	02/08 (We)	Topic 2: Functions & Services of an OS – Cont'
4	02/13 (Mo)	Lincoln's Birthday: **No CISC 3320, MW3 lecture!**
	02/15 (We)	Topic 2: Functions & Services of an OS – Cont' • Homework 1 on Topic 1 due
5	02/20 (Mo)	Presidents' Day: **No CISC 3320, MW3 lecture!**
	02/21 (Tu)	Conversion Day: We have a lecture today! Topic 3: I/O and Interrupts
6	02/22 (We)	Topic 3: I/O and Interrupts – Cont'
7	02/27 (Mo)	Topic 4: Processes
	03/01 (We)	Topic 4: Processes – Cont'

Week	Date	Topics, Exams, and Assignment Deadlines
8	03/06 (Mo)	Topic 4: Processes – Cont'
	03/08 (We)	Topic 5: Threads • Homework 2 on Topics 2 and 3 due
9	03/13 (Mo)	Topic 5: Threads – Cont'
	03/15 (We)	Topic 6: CPU Scheduling
10	03/20 (Mo)	Topic 6: CPU Scheduling – Cont'
	03/22 (We)	Topic 7: Memory Management • Homework 3 on Topics 4, 5, and 6 due
11	03/27 (Mo)	Topic 7: Memory Management – Cont'
	03/29 (We)	Topic 7: Memory Management – Cont'
12	04/03 (Mo)	**Midterm Exam: 03:40 PM – 04:55 PM, at WEB 1st Floor**
	04/05 (We)	Spring Recess: **No CISC 3320, MW3 lecture!**
13	04/10 (Mo)	Spring Recess: **No CISC 3320, MW3 lecture!**
	04/12 (We)	Spring Recess: **No CISC 3320, MW3 lecture!**
14	04/17 (Mo)	Topic 8: Virtual Memory
	04/19 (We)	Topic 8: Virtual Memory – Cont'
15	04/24 (Mo)	Topic 9: Process Coordination & Semaphores
	04/26 (We)	Topic 9: Process Coordination & Semaphores – Cont' • Homework 4 on Topics 7 and 8 due
16	05/01 (Mo)	Topic 10: Deadlock
	05/03 (We)	Topic 10: Deadlock – Cont'
17	05/08 (Mo)	Topic 11: File Management
	05/10 (We)	Topic 12: Introduction to Computer Networks • Homework 5 on Topics 9, 10, and 11 due
18	05/15 (Mo)	Topic 13: Introduction to Protection and Security • Final Exam Preparation/Review
Finals	05/17 (We)	**Final Exam: 03:30 PM – 05:30 PM, at room TBA**

– End of CISC 3320 Abridged Syllabus –