NYU PARIS
Computer Networks
CS-UY 4793G

CET GMT+01:00

SPRING 2022

We know that you may be taking courses at multiple locations this semester. If you are enrolled in this course 100% remotely and are not a Go Local/Study Away student for this course site, please make sure that you've completed the online academic orientation via NYU Classes so you are aware of site specific support structure, policies and procedures. **Please contact the site academic staff (include the email address/es)** if you have trouble accessing the NYU Classes site.

If you are attending in person, you will be assigned a seat on the first day and are expected to use that seat for the entire semester due to NYU COVID-19 safety protocol.

Instructor Information
TBA

Course Information

- CS-UY 1134
- Computer Networks
- Co-requisite or prerequisite: CS-UY 1134: Data Structures and Algorithms
- *Tuesday and Thursday: 17:45 AM – 19:00 PM*
  - https://nyu.zoom.us

Course Overview and Goals

This course is an introductory course in computer networks. The emphasis will be on the basic performance and engineering tradeoffs in the design and implementation of computer networks. To make the issues more concrete, the class includes several multi- week projects requiring significant design and implementation.

The goal is for students to learn not only what computer networks are and how they work today, but also why they are designed the way they are and how they are likely to evolve in the future. We will draw examples primarily from the Internet. Topics to be covered include: congestion/flow/error control, routing, addressing, naming, multi-casting, switching, internetworking, and network security. Evaluation is based on homework assignments, the projects, and a final exam.

Upon Completion of this Course, students will be able to:

- Understand network concepts
- Design and implement a networked application
- Learn the necessary vocabulary of computer networks
- Demonstrate a general knowledge of how routing is done at the Internet

Course Requirements

Class Participation

You are expected to attend class in person or remote synchronously. Your active participation in class and attendance will be reflected in this part of the course requirements.

Grading of Assignments

The grade for this course will be determined according to the following formula:

Assignments/Activities	% of Final Grade
Labs reports and HomeWorks	30%
Project	30%
Final Exam	40%

Letter Grades

Letter grades for the entire course will be assigned as follows:

Letter Grade	Points	Description

A	16-20	Outstanding
A-	15	Excellent
B+	14	Very Good
B	13	Good
B-	12	Satisfactory
C+	11	Above Average
C	10	Average
C-	9	Below Average
D+	8	Unsatisfactory
D	7	Low Pass
D-	6	Low Pass
F	5	Fail

View Grades

Grades will be available on the NYU Classes site.

Course Schedule

Week/Date	Topic	Reading	Assignment Due
Session 1 27/01/2022	Introduction to computer networks	Introduction to computer networks	[Insert assignment]

Session 2 01/02/2022	Application Layer	HTTP, FTP, Email and DNS	Homework 1
Session 3 08/02/2022	Transport Layer	Transport Layer, role, functioning and protocols	
Session 4 15/02/2022	Transport Layer	Flow Control, Congestion Control	Homework 2
Session 5 22/02/2022	Network Layer	Internet Protocol	
Session 6 01/03/2022	Network Layer	Internet Protocol	Homework 3
Session 7 08/03/2022	Network Layer	Routing	Mid-term exam
Session 8 22/03/2022	Link Layer	Datalink and Ethernet	Homework 4
Session 9 29/03/2022	Wireless and Mobile Networks	Wifi and Cellular networks	Homework 5
Session 10 05/04/2022	Intro to security in computer networks	Principles of cryptography	
Session 11 12/04/2022	TLS/SSL	TLS/SSL	
Session 12 19/04/2022	TLS/SSL	TLS/SSL	Homework 6
Session 13 26/04/2022	Network intrusion detection / Firewalling	Firewalling	Homework 7
Session 14 03/05/2022	Network intrusion detection / Firewalling	Intrusion detection	Homework 8

Tests and Quizzes

- [Insert test name and date]

Course Materials

Required Textbooks & Materials

- Computer Networking: A Top-Down Approach – by Kurose and Ross

Optional Textbooks & Materials

Resources
- **Access your course materials**: [NYU Classes](#) (nyu.edu/its/classes)
- **Databases, journal articles, and more**: [Bobst Library](#) (library.nyu.edu)
- **Assistance with strengthening your writing**: [NYU Writing Center](#) (nyu.mywconline.com)
- **Obtain 24/7 technology assistance:** [IT Help Desk](#) (nyu.edu/it/servicedesk)

Course Policies

Hygiene/Physical Distancing policies
- Students will be assigned/choose a seat on the first day of class. For NYU COVID-19 Safety protocols, please use the same seat for the duration of the semester.

Attendance and Tardiness

Studying at Global Academic Centers is an academically intensive and immersive experience, in which students from a wide range of backgrounds exchange ideas in discussion-based seminars. Learning in such an environment depends on the active participation of all students. And since classes typically meet once or twice a week, even a single absence can cause a student to miss a significant portion of a course. **To ensure the integrity of this academic experience, class attendance at the centers or online through NYU Classes if the course is remote synchronous/blended, is expected promptly when class begins. Unexcused absences will affect students' semester participation grade. If you have scheduled a remote course immediately preceding/following an in-person class, you may want to discuss where at the Academic Center the remote course can be taken** Students are responsible for making up any work missed due to absence. Repeated absences in a course may result in failure.

Students are responsible for making up any work missed due to absence. This means they should initiate email and/or office hour discussions to address any missed lectures and assignments and arrange a timeline for submitting missed work.

Suggested New Section: Classroom Etiquette/Expectations
Things to consider:
- Please be mindful of your microphone and video display during synchronous class meetings. Ambient noise and some visual images may disrupt class time for you and your peers.
- If you are not using your cell phone to follow the lesson, cell phones should be turned off or in silent mode during class time.

- Make sure to let your classmates finish speaking before you do.
- Please do not eat during class and minimize any other distracting noises (e.g. rustling of papers and leaving the classroom before the break, unless absolutely necessary)
- If deemed necessary by the study away site (ie COVID related need), synchronous class sessions may be recorded and archived for other students to view. This will be announced at the beginning of class time.
- Students should be respectful and courteous at all times to all participants in class. Consider using the chat function or "raise hand" function in order to add your voice to class discussions especially if leaving the video on presents challenges.

Final Exams

Final exams must be taken at their designated times. Should there be a conflict between final exams, please bring it to the attention of the site Academic representative as soon as this is known to facilitate alternate arrangements. Final exams may not be taken early, and students should not plan to leave the site before the end of the finals period.

Late Assignment

1) Late work should be emailed to the faculty as soon as it is completed.
2) Students who arrive to class late for an exam do not have automatic approval to take extra time to complete the exam.
3) Students who miss an exam (including the final) without previously arranged permission will receive a zero on that exam.
4) Assignments due during finals week that are submitted more than 3 days without previously arranged extensions will not be accepted and will receive a zero. Any exceptions or extensions for work during finals week must be discussed with the Site Director.

Incomplete Grade Policy

An "incomplete" is a temporary grade that indicates that the student has, for good reason, not completed all of the course work. This grade is not awarded automatically nor is it guaranteed; rather, the student must ask the instructor for a grade of "incomplete," present documented evidence of illness, an emergency, or other compelling circumstances, and clarify the remaining course requirements with the instructor.

In order for a grade of "incomplete" to be registered on the transcript, the student must fill out a form, in collaboration with the course instructor and the academic administration at the site; it should then be submitted to the site's academic office. The submitted form must include a deadline by which the missing work will be completed. This deadline may not be later than the end of the following semester.

Academic Honesty/Plagiarism

As the University's policy on "Academic Integrity for Students at NYU" states: "At NYU, a commitment to excellence, fairness, honesty, and respect within and outside the classroom is essential to maintaining the integrity of our community. By accepting membership in this community, students take responsibility for demonstrating these values in their own conduct

and for recognizing and supporting these values in others." **Students at Global Academic Centers must follow the University and school policies.**

The presentation of another person's words, ideas, judgment, images, or data as though they were your own, whether intentionally or unintentionally, constitutes an act of plagiarism.

NYU X takes plagiarism very seriously; penalties follow and may exceed those set out by your home school. All your written work must be submitted as a hard copy AND in electronic form to the lecturer. Your lecturer may ask you to sign a declaration of authorship form.

It is also an offense to submit work for assignments from two different courses that is substantially the same (be it oral presentations or written work). If there is an overlap of the subject of your assignment with one that you produced for another course (either in the current or any previous semester), you MUST inform your professor.

For guidelines on academic honesty, clarification of the definition of plagiarism, examples of procedures and sanctions, and resources to support proper citation, please see:

[NYU Academic Integrity Policies and Guidelines](#)

[NYU Library Guides](#)

Religious Observances

Students observing a religious holiday during regularly scheduled class time are entitled to miss class without any penalty to their grade. This is for the holiday only and does not include the days of travel that may come before and/or after the holiday.

Students must notify their professor and the local Academics team in writing via email at least 7 days before being absent for this purpose.

Inclusion, Diversity, Belonging and Equity

NYU is committed to building a culture that respects and embraces diversity, inclusion, and equity, believing that these values – in all their facets – are, as President Andrew Hamilton has said, "...not only important to cherish for their own sake, but because they are also vital for advancing knowledge, sparking innovation, and creating sustainable communities." At NYU PARIS, we are committed to creating a learning environment that:

• fosters intellectual inquiry, research, and artistic practices that respectfully and rigorously take account of a wide range of opinions, perspectives, and experiences; and

• promotes an inclusive community in which diversity is valued and every member feels they have a rightful place, is welcome and respected, and is supported in their endeavours.

Moses Accommodations Statement

Academic accommodations are available for students with documented and registered disabilities. Please contact the Moses Center for Student Accessibility (+1 212-998-4980 or mosescsd@nyu.edu) for further information. Students who are requesting academic accommodations are advised to reach out to the Moses Center **as early as possible in the semester for assistance**. Accommodations for this course are managed through the site sponsoring the class once you request it.

Instructor Bio/About Your Instructor

Badis Hammi is an associate professor and the head of the "Bachelor's in cybersecurity" program in EPITA Engineering School, France. He was the head of the "Msc Cybersecurity and Management" program in PSB School, France. He received his PhD in computer science from Troyes University of Technology in 2015. Then, he held a research position at Institut Mines Telecom ParisTech, France. His current areas of research interest include networks security, intrusion detection systems and blockchain technology.