

Management Science and Information Systems
Course Number: 29:623:375
Course Title: Computer Network Applications

COURSE DESCRIPTION

Data communication technologies have a central role in the economic and social structures of the society. They have the impact on business processes, organizational structures, and the ways people do business, work, and communicate with each other. The data communications landscape is a full of coevolving technologies. Some describe it as "The Land of Confusion." It is challenging to make sense of this landscape because uncertainty, dynamism, and rapid change are some of the inherent characteristics of this world. Yet, those who know how to operate under such circumstances can exploit these characteristics for gaining competitive advantages.

This course is an introduction to the fundamentals of data communications technologies and to the business opportunities and challenges presented by these technologies. The course covers a balanced mix of data communications fundamentals, emerging data communications technologies, and business and IT management concepts. The course aims to develop a coherent understanding of the fundamental data communications concepts and technologies. Homework assignments and laboratory exercises are designed to expose students to practical applications of these concepts and technologies.

COURSE MATERIALS

Required Textbook(s):

1. Computer Networking A Top-Down Approach, James Kurose, Keith Ross, 6th Edition, Pearson, ISBN 978-0-13-285620-1.
2. Software used in lab: Wireshark.

LEARNING GOALS AND OBJECTIVES

LG01: Develop a coherent understanding of the fundamental data communications concepts and technologies.

ACADEMIC INTEGRITY

I do NOT tolerate cheating. Students are responsible for understanding the RU Academic Integrity Policy (<http://academicintegrity.rutgers.edu/>)

I will strongly enforce this Policy and pursue *all* violations. On all examinations and assignments, students must sign the RU Honor Pledge, which states, “On my honor, I have neither received nor given any unauthorized assistance on this examination or assignment.” I will screen all written assignments through *SafeAssign* or *Turnitin*, plagiarism detection services that compare the work against a large database of past work. Don’t let cheating destroy your hard-earned opportunity to learn. See business.rutgers.edu/ai for more details.

ATTENDANCE AND PREPARATION POLICY

- Expect me to attend all in-class sessions. I expect the same of you. If I am to be absent, my department chair or I will send you notice via email and Canvas as far in advance as possible.
 - For weather emergencies, consult the campus home page. If the campus is open, class will be held.
 - Expect me to arrive on time for each class session. I expect the same of you.
 - Expect me to prepare properly for each class session. I expect the same of you. Complete all background reading and assignments. You cannot learn if you are not prepared. The minimum expectation is that for each class session, you have prepared by studying for at least twice as many hours as the class hours.
 - Expect me to participate fully in each class session. I expect the same of you. Stay focused and involved. You cannot learn if you are not paying attention.
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CLASSROOM CONDUCT

- All cell phones should be turned off
 - Please raise your hand before asking questions
 - Refrain from side conversations, sleeping, and other disruptive behaviors.
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EXAM DATES AND POLICIES

(NO MAKEUP EXAMS)

There are 2 exams in this course:

Midterm1:

In-class, closed book/notes, calculator allowed, no laptops or PDAs, all cell phones turned off

Final Exam:

Comprehensive, in-class, closed book/notes, calculator allowed, no laptops or PDAs, all cell phones turned off. During in-class exams, the following rules apply:

- If you have a disability that influences testing procedures, provide me an official letter from the Office of Disability Services at the start of the semester.
- No cell phones or other electronics are allowed in the testing room.
- You must show a valid Rutgers photo ID to enter the room and to turn in the exam. -
Alternate seating; do not sit next to another student or in your usual seat.

GRADING POLICY

Course grades are determined as follows:

Project	30%
Midterm 1	30%
Final exam	40%
Extra credit:	None

Grade distribution:

Letter	Percentage
A	90-100
B+	87-89.99
B	80-86.99
C+	77-79.99
C	70-76.99
D+	67-69.99
D	60-66.99
F	<60

1. Grades will not be rounded up or down – they are calculated and recorded to the one hundredth place automatically and are used in that form to assign midterm and final grades. There will be no “curve”.
2. All examinations and quizzes, including the Final Examination, should be considered cumulative.
3. **COURSE GRADE WILL BE ISSUED WHEN ALL COURSE REQUIREMENTS ARE MET.**
 - Grade posting: Grades will be provided within a week of an exam, assignment/paper submission, or quiz. Grades on hardcopy items will be provided in person in the class when the specific items are returned. For online/Canvas items, grades will be posted in the Canvas.

- Return of graded items: Graded items will be returned within two weeks in person for hardcopy items and via Canvas for online items. Final exam and final project reports will not be returned. Canvas for this course will be turned off and archived at the end of the final exam.
- Grade related information: No grade related information will be provided through email. All grade related information will be provided in person via appointments. It is expected that you are respectful when you review your grade with me and accept the grade you have earned. Please do not use abusive language in email or in person. Any instances of that will be reported according to university guidelines.
- Warning grade roster: Warning grades will be issued if needed. You must watch for warning grades.
- Pregrading & regrading: Requests to review assignments before final submission (pregrading) will be provided by appointment and primarily after class hours. Requests to regrade assignments, Quizzes, & exams must be done in writing to the instructor within one week of the specific items being returned. Regraded items will be delivered back to students in person during after class hours.

Grade grubbing: Your final grade is not subject to negotiation. If you feel I have made an error, submit your written argument to me within one week of receiving your grade of the specific item. If you want me to review the final grade, submit your written argument to me within one week of receiving your final grade. Clarify the precise error I made and provide all due supporting documentation. If I have made an error, I will gladly correct it. But I will adjust grades only if I have made an error. I cannot and will not adjust grades based on consequences, such as hurt pride, lost scholarships, lost tuition reimbursement, lost job opportunities, or dismissals. Do not ask me to do so. It is dishonest to attempt to influence faculty in an effort to obtain a grade that you did not earn, and it will not work

COURSE SCHEDULE

(Tentative schedule, Subject to Change)

Topic
Administrative Details
Introduction to Networking (Chapter 1)
Introduction to Networking (Chapter 1)
Application Layer (Chapter 2)
Transport Layer (Chapter 3)
Network Layer (Chapter 4)
EXAM 1
Network Layer (Chapter 4)

Network Layer (Chapter 4)
Wireless Networking (Chapter 6)
Security in Computer Networks (Chapter 8)
Google Searching Special Topic: Web Privacy
Project
Project
Project
Project
Review
Reading Day
FINAL EXAM

SUPPORT SERVICES

If you need accommodation for a *disability*, obtain a Letter of Accommodation from the Office of Disability Services. The Office of Disability Services at Rutgers, The State University of New Jersey, provides student-centered and student-inclusive programming in compliance with the Americans with Disabilities Act of 1990, the Americans with Disabilities Act Amendments of 2008, Section 504 of the Rehabilitation Act of 1973, Section 508 of the Rehabilitation Act of 1998, and the New Jersey Law Against Discrimination. More information can be found at ods.rutgers.edu.

[Rutgers University-New Brunswick ODS phone (848)445-6800 or email dsoffice@echo.rutgers.edu]

[Rutgers University-Newark ODS phone (973)353-5375 or email ods@newark.rutgers.edu]

If you are *pregnant*, the Office of Title IX and ADA Compliance is available to assist with any concerns or potential accommodations related to pregnancy.

[Rutgers University-New Brunswick Title IX Coordinator phone (848)932-8200 or email jackie.moran@rutgers.edu]

[Rutgers University-Newark Office of Title IX and ADA Compliance phone (973)353-1906 or email TitleIX@newark.rutgers.edu]

If you seek **religious accommodations**, the Office of the Dean of Students is available to verify absences for religious observance, as needed.

[Rutgers University-New Brunswick Dean of Students phone (848)932-2300 or email deanofstudents@echo.rutgers.edu]

[Rutgers University-Newark Dean of Students phone (973)353-5063 or email DeanofStudents@newark.rutgers.edu]

If you have experienced any form of **gender or sex-based discrimination or harassment**, including sexual assault, sexual harassment, relationship violence, or stalking, the Office for Violence Prevention and Victim Assistance provides help and support. More information can be found at <http://vpva.rutgers.edu>.

[Rutgers University-New Brunswick incident report link: <http://studentconduct.rutgers.edu/concern/>. You may contact the Office for Violence Prevention and Victim Assistance at (848)932-1181]

[Rutgers University-Newark incident report link: https://cm.maxient.com/reportingform.php?RutgersUniv&layout_id=7 . You may also contact the Office of Title IX and ADA Compliance at (973)353-1906 or email at TitleIX@newark.rutgers.edu. If you wish to speak with a staff member who is confidential and does **not** have a reporting responsibility, you may contact the Office for Violence Prevention and Victim Assistance at (973)353-1918 or email run.vpva@rutgers.edu]

If students who have experienced a temporary condition or injury that is adversely affecting their ability to fully participate, you should submit a request via <https://temporaryconditions.rutgers.edu> .

If you are a military **veteran** or are on active military duty, you can obtain support through the Office of Veteran and Military Programs and Services. <http://veterans.rutgers.edu/>

If you are in need of **mental health** services, please use our readily available services.

[Rutgers University-Newark Counseling Center: <http://counseling.newark.rutgers.edu/>]

[Rutgers Counseling and Psychological Services–New Brunswick: <http://rhscaps.rutgers.edu/>]

If you are in need of **physical health** services, please use our readily available services.

[Rutgers Health Services – Newark: <http://health.newark.rutgers.edu/>]

[Rutgers Health Services – New Brunswick: <http://health.rutgers.edu/>]

If you are in need of *legal* services, please use our readily available services: <http://rusls.rutgers.edu/>

Students experiencing difficulty in courses due to *English as a second language (ESL)* should contact the Program in American Language Studies for supports.

[Rutgers–Newark: PALS@newark.rutgers.edu]

[Rutgers–New Brunswick: eslpals@english.rutgers.edu]

If you are in need of additional *academic assistance*, please use our readily available services.

[Rutgers University-Newark Learning Center: <http://www.ncas.rutgers.edu/rlc>

[Rutgers University-Newark Writing Center: <http://www.ncas.rutgers.edu/writingcenter>]

[Rutgers University-New Brunswick Learning Center: <https://rlc.rutgers.edu/>]

[Optional items that many faculty include:

- Students must sign, date, and return a statement declaring that they understand the RU Academic Integrity Policy.

- Students must sign, date, and return a statement declaring that they understand this syllabus.]