

EST 320: Communication Technology Systems

Note: The course website will contain all of the information in this print version of the course outline and more. Students will be expected to regularly check the course website and also to check email for notices about updates as the course progresses.

Professor: James F. Larson

Classes: T/Th 5:00-6:20 P.M. B-_____

Office Hours: T/W 9:00-11:00 and by appointment.

Course Objectives

- This course provides a comprehensive introduction to digital networks, focusing on the Internet. It places the evolution of digital networks in the broad context of a transition from the industrial mass media economy to today's networked, sharing economy. The context also includes the rise of a new field called network science and the central role of ICT in Korea's national development.
- It emphasizes key concepts and an understanding of how modern networks work, centering on a top down approach to the major layers of network protocols, starting with the application layer.
- The class is aimed at those who will manage and use future generations of networks, rather than computer science and engineering majors and does not require advanced mathematics or computer programming background. However, a working assumption is that those who manage the next generation of global digital networks will need to understand the technical underpinnings and origins of the internet, and the context in which it arose.

Assigned readings

Textbook: Kurose, James F. and Keith W. Ross, *Computer Networking: A Top-Down Approach*, Sixth Edition, Pearson Education Limited, 2013.

Additional Readings will be assigned as necessary one week in advance of class meeting.

Course Format and Evaluation

Course format: Each of the main topics covered in this class will be presented using a combination of lectures and team-based small group discussion.

Evaluation: Grading for this course is based on the following elements.

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| Class participation and attendance | 25% |
| Assignments | 25% |
| Quizzes: | 50% |

Class participation means asking and attempting to answer questions (it is not necessary to have a correct answer) and participating in discussions during class. Unexcused absences or late arrivals to class will reduce the participation grade. Participants in the class will also be required to periodically complete online peer evaluations using the Teammates program. Results of these evaluations will help the instructor determine the final participation grade.

Policy on Plagiarism and Screening for Plagiarism

An act of plagiarism (defined in the University catalog as “Any passing off of another’s ideas, words, or work as one’s own”) is considered to be a violation of the University’s Student Code of Conduct and Ethics: Academic and will be addressed using the Policies and Procedures outlined on pages 57-58 of the University’s 2005-2006 catalog. The instructor in this course reserves the right to use computerized detection systems to help prevent plagiarism. Currently, SUNY- KOREA subscribes to Turnitin.com for purposes of plagiarism screening. By enrolling in this course, students agree that all assignments are subject to submission for textual similarity review to Turnitin.com. Please note that any assignments or course documents submitted to this service will be included as source documents for the restricted access database of Turnitin.com which is exclusively used for the purpose of detecting plagiarism. You may indicate in writing to the instructor by the end of the add/drop deadline for this course that you refuse to participate in the Turnitin.com process, in which case the instructor can use other means to verify the originality of your work. Material identified as plagiarized will be dealt with pursuant to University’s Student Code of Conduct and Ethics: Academic. Penalties for plagiarism can be severe, up to and including expulsion from the University.

Attendance and Participation Policy

This is a required class and students are expected to attend every class. You are allowed one unexcused absence without penalty. Otherwise SUNY Korea attendance policy will be followed, so familiarize yourself with it and make sure to provide excuses to the instructor or TA before or shortly after you missed a class.

- From SUNY Korea attendance policy:

- If a student has over 20% unexcused absence, the student's final course grade will be an 'F'. For this class it means 7 (seven) unexcused absence of a student will lead to an F grade of the course.
- Students should report the reason of absence to the instructor in advance, or immediately after the absence.
- When a student excuses his/her absence, the student must provide documentation of the reason for the absence to the instructor.
- The instructor of the course reserves the right to excuse absences and may excuse the absence if the submitted documentation fulfills the conditions below.
 - Extreme emergencies (e.g. death in the family).
 - Severe medical reasons with doctor's note (Not a slight illness).
 - Very important events (e.g. national conference, official school event).

Course Calendar

Week 1 – Tuesday, February 25

Course Overview and Introductions

Week 1 – Thursday, February 27

The Wealth of Networks, Network Science, "Network-centric digital development in Korea"

Week 2 – Tuesday, March 3

Chapter 1, Computer Networks and the Internet

Week 2 – Thursday, March 5

Chapter 1, Computer Networks and the Internet

QUIZ 1

Week 3 – Tuesday, March 10

Chapter 2, Application Layer

Week 3 – Thursday, March 12

Chapter 2, Application Layer

Week 4 – Tuesday, March 17

Chapter 2, Application Layer

QUIZ 2

Week 4 – Thursday, March 19

School Anniversary NO CLASSES IN SESSION

Week 5 – Tuesday, March 24

Chapter 3: Transport Layer

Week 5 – Thursday, March 26

Chapter 3: Transport Layer

Week 6 – Tuesday, March 31

Chapter 4: The Network Layer

Week 6 – Thursday, April 2

Chapter 4: The Network Layer

QUIZ 3

Week 7 – Tuesday, April 7

Chapter 5: The Link Layer

Week 7 – Thursday, April 9

Chapter 5: The Link Layer

Week 8 – Tuesday, April 14

Chapter 5: The Link Layer

Week 8 – Thursday, April 16

Chapter 5: The Link Layer

QUIZ 4

Week 9 -- Tuesday, April 21

Chapter 6: Wireless and Mobile Networks

Week 9 -- Thursday, April 23

Chapter 6: Wireless and Mobile Networks

Week 10 -- Tuesday, April 28

Chapter 6: Wireless and Mobile Networks

QUIZ 5

Week 10 -- Thursday, April 30 Buddha's Birthday NO CLASS

Week 11 -- Tuesday, May 5 Children's Day NO CLASSES IN SESSION

Week 11 -- Thursday, May 7

Chapter 7: Multimedia Networking

Week 12 -- Tuesday, May 12

Chapter 8: Security in Computer Networks

Week 12 -- Thursday, May 14

Chapter 8: Security in Computer Networks

QUIZ 6

Week 13 -- Tuesday, May 19

Internet Governance

Global Cyber-Security

Week 13 -- Thursday, May 21

Internet Governance

Global Cyber-Security

Week 14 -- Tuesday, May 26

Next generation networks 5G and beyond

Week 14 -- Thursday, May 28

Next generation networks 5G and beyond

Week 15 -- Tuesday, June 2

Next generation networks Public Safety Networks

Week 15 -- Thursday, June 4

Next generation networks Public Safety Networks

Week 16 -- Monday, June 8 Correction day (follows Thursday schedule)

Korea's role in the future global network society

FINAL QUIZ