

# CS 4643

## Distributed Networks, Fall 2019

### General Information

Class Time: Tuesday and Thursday, 12:30 pm – 1:45 pm, Room CB106

Prerequisite: CS1623 with a grade of C or better

Required Textbook(s):

*Computer Networking: A Top-Down Approach, 7th Edition*, 7<sup>th</sup> edition, by James Kurose and Keith, Pearson Publisher, ISBN: 9780133594140

Reference Textbook(s):

*Cloud Computing, 1<sup>st</sup> Ed.*, by Kris Jamsa, Jones & Bartlett Learning publisher, ISBN-13: 9781449647391

*Notes:* Reading material such as Research Papers, Internet Drafts, Request For Comments (RFCs), Walk-Through Tutorials, and the like will be assigned in the class.

### Instructor Information

Instructor: Ming-Shan Su, Ph.D.

Office: Room CB130, Classroom Building

Phone: (580) 745-2280

Email: [msu@se.edu](mailto:msu@se.edu)

Office Hours: 8:30am-10:30am (M,T,W,TH)

2:30pm-4:30pm (M)

Other hours by appointment (arrangement must be made in advance)

### Course Description:

The purpose of this course is to learn the general concepts of distributed network computing and to realize how those concepts have been applied in computer network technologies. Also, the advantages and disadvantages of those technologies will be discussed. In addition, we will briefly discuss assorted network topics, such as Wireless/Mobile Networks, Security in Computer Networks, and Multimedia Networks.

In this semester, we will also cover the fundamental topics of Cloud Computing. As the author Kris Jamsa mentioned, “Cloud Computing is ideal for students and users eager to migrate to the cloud, IT professionals seeking knowledge on cloud fundamentals, developers who will build the cloud solutions of the future, and CIOs wanting insights on the most recent cloud solutions. Cloud computing is changing the way businesses and users interact with computers and mobile devices. Gone are the days of expensive data centers, racks of disk drives, and large IT support teams.”

### Course Objectives

In this course, students will learn various topics of advanced computer networks and cloud computing, such as software as a service (SaaS), platform as a service (PaaS), infrastructure as a service (IaaS), Identity as a Service (IDaaS), Data Storage in the Cloud, server and desktop virtualization, and much more throughout the semester.

In addition, the objectives of this course are directly linked to the objectives of the Computer Science Program. The superscripts at the beginning of each course objective are links to the specific Computer Science Program objectives. A list of the program objectives can be found on pages 84-85 and General Education objectives on page 57-58 at the following link:

[https://www.se.edu/student-life/wp-content/uploads/sites/37/2019/06/CATALOG\\_201719\\_WEB2019.pdf](https://www.se.edu/student-life/wp-content/uploads/sites/37/2019/06/CATALOG_201719_WEB2019.pdf)

By the end of this course, a student will be expected to comprehend the following topics:

1. <sup>1</sup>What Cloud Computing is.

2. <sup>2,3,6,7</sup>What Software as a Service (SaaS) is and examine browser-based SaaS solutions and the advantages they provide.
3. <sup>2,3,6,7</sup>What Platform as a Service (PaaS) is and introduce cloud-based hardware and software platforms.
4. <sup>2,3,6,7</sup>What Infrastructures as a Service (IaaS) is and introduce the concept of a cloud-based data center
5. <sup>2,3,6,7</sup>What Identity as a Service (IDaaS) is and examines the use of cloud-based identity-management solutions.
6. <sup>1,6,8</sup>Gain the knowledge on topics like Data Storage in the Cloud, Collaboration in the Cloud, Virtualization, Securing the Cloud, and The Future of the Cloud.

## Evaluation and Examination:

Several projects/assignments and two exams will be given during the semester. The assignment or exam dates will be announced at least one week in advance in class. Missing an examination without a formally approved excuse will result in a grade of zero on the exam. There will be no makeup exams except in cases of emergencies. Graduate students will be asked to do extra reports or presentation in this class.

## Grading:

The course grade consists of four parts. They are weighted as follows.

Homework/Projects: 55%, First Exam: 15%, Second Exam: 15%, Final Exam: 15%

The letter grading scale will be assigned on a percentage basis as follows.

Grade 'A': 90%+, 'B': 80-89%, 'C': 70-79%, 'D': 60-69%, 'F': Otherwise. Borderline grades will be determined by the instructor on the basis of student performance and attendance.

## Course Policies:

Attendance: Attendance is expected and roll will be taken each class period. After 5 absences, your grade will drop a letter grade for each subsequent absence. It is the student's own responsibility to obtain material distributed through his/her classmate on class days when he/she was absent. Portable phones must be turned to vibration mode during the class.

### Assignments:

All the assignments or projects can be coded in C, C++, C#, VB.NET, or Java language. All assignments are **due by 11:59 pm** on the date due.

- For every 24 hours late, 10% of the grade for the project will be deducted. Any project that is **more than 3 days late will not be evaluated**.
- **If a project (program) does not compile, the project will receive no credit.** If a project can compile but can not execute properly, it will receive an automatic deduction of 50% off from the grade on that project.
- Each project is expected **to be documented clearly**. A project that lacks or has unclear documentation will receive an automatic deduction of up to 15% from the grade on that project.
- **You are required to do the project by yourself.** Copying programs or consulting others for coding is strictly prohibited and may result in a failing grade.

### Academic Dishonesty:

Plagiarism and cheating are prohibited and may result in a failing grade, failure in the course, and/or expulsion from the University.

### Posting of Grades:

Final grades will not be posted and grades will not be dispersed over the telephone. If you wish to have your final grade sent to you, please bring a self-addressed, stamped envelope to the final exam.

### American with Disabilities Act:

**The Office of Disability Services is now located in the Student Union, Room 328.** Additionally, all accommodated test proctoring will take place in this location (i.e. *no longer in the Learning Center*). Any student needing accommodations due to a disability should contact the Office of Disability Services, GDJ Student Union Room 328 or call (580) 745-3036. It is the responsibility of each student who anticipates or experiences barriers to their academic experience to make an official request for disability related accommodations in a timely manner. If you have questions regarding disability accommodation process or policy please contact Tiffany Tate, [ttate@se.edu](mailto:ttate@se.edu) for more information.

Equal Opportunity Statement:

Southeastern Oklahoma State University, in compliance with all applicable federal and state laws and regulations, does not discriminate on the basis of race, color, religion, national origin, sex, age, disability, sexual orientation, gender identity, or status as a veteran in any of its policies, practices, procedures, or programs. This includes, but is not limited to: admissions, employment, financial aid, and educational services. Inquiries regarding non-discrimination and equity policies may be directed to: Michael Davis, Director of Compliance and Safety & Title IX Coordinator, (580) 745-3090, or [mdavis@se.edu](mailto:mdavis@se.edu).

Title IX of the Education Amendments of 1972 (20 U.S.C. § 1681) states:

No person in the United States, shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving federal financial assistance...” Southeastern Oklahoma State University does not discriminate on the basis of sex in its education programs or activities, in compliance with Title IX and the U.S. Department of Education’s regulations at 34 C.F.R. §§ 86.1 et seq. Individuals who believe they have been discriminated against on the basis of sex may contact S.E.’s Title IX Coordinator at 580-745-3090, [titleix@se.edu](mailto:titleix@se.edu), or PMB 2750.

Mental Wellness:

Any student experiencing mental or emotional issues who desires free, confidential, clinical counseling is encouraged to contact the SE Counseling Center at (580) 745-2988 to schedule an appointment during normal working hours Monday-Friday, 8:00AM to 5:00PM. For after-hours mental health emergencies, please call SE Campus Police at (580) 745-2911 or the Mental Health Crisis Hotline at 1- (800) 522-1090.

**Other Policy:**

The instructor reserves the right to make adjustments to the syllabus and/or grading policy as needed in order to meet the instructional needs and goals of the class. Students will be notified of any adjustments to the syllabus.

**Tentative Class Schedule**

WK	Dates		Chapters/Topics	HW	Remarks
1	Aug.	20,22	Note: Introducing Cloud Computing		
2		27,29			
3	Sept.	03,05	Software as a Service (SaaS)	1	
4		10,12			
5		17,19	Platform as a Service (PaaS)	2	<b>Exam 1</b>
6		24,26			
7	Oct.	01,03	Infrastructure as a Service (IaaS)		
8		08,10		3	
9		15,17	Wireless Network		
10		22,24			
11		29,31	Network Security	4	<b>Exam 2</b>
12	Nov.	05,07			
13		12,14	Multimedia Network, ...	5	
14		19,21			
15		26,28	Thanksgiving Break	6	

16	Dec.	03,05	QoS – Quality of Services, Network Management		
17		09-13	<b>Final Exam: 12/13, Thursday ( 11:00am – 1:00pm)</b>		<b>Final</b>

### Semester Calendar:

August 19	Classes Begin
August 23	<ul style="list-style-type: none"> <li>• Last Day to Enroll In or Add Classes</li> <li>• Last Day to Drop a Class with No Grade Record</li> <li>• Last Day to Drop a Class with Refund/No Charges</li> </ul>
<b>August 30</b>	Student Attendance Certifications are due, noon
*September 2	Labor Day Holiday
<b>September 13</b>	1 <sup>st</sup> EAR/Progress reports due
<b>October 11</b>	2 <sup>nd</sup> EAR/Progress reports due
<b>October xx (TBA)</b>	Assessment Testing Day (classes resume at 1:00 pm)
November 6	Final EAR/Progress reports due
November 9	Final Day to Drop or Withdraw a Class with “W”
November 25-Dec. 1	Thanksgiving Holiday (Break)
December 09-13	Finals Week
December 13	Semester Ends
<b>December 17</b>	Submit Final Grades by noon

### Resources:

1. SE blackboard, <http://blackboard.se.edu>
2. Textbook website: <https://www.pearson.com/us/higher-education/product/Kurose-Computer-Networking-A-Top-Down-Approach-7th-Edition/9780133594140.html>