

# CSCE 4013: Cloud Computing and Security

## Spring 2019

Lecture: M/W/F, 11:50AM - 12:40PM, BELL 2273

Instructor: Miaoqing Huang  
Office: JBHT 526  
Tel: 479-575-7578  
Email: mqhuang@uark.edu  
Website: [www.csce.uark.edu/~mqhuang](http://www.csce.uark.edu/~mqhuang)

Office Hours: Monday: 10:00 -11:30 AM  
Wednesday: 1:00 - 2:30 PM

Course

Management: Blackboard ([learn.uark.edu](http://learn.uark.edu))

TA: Fengli Zhang  
Office: JBHT 434  
Office Hours: Monday/Wednesday 1:30 - 3:00 PM  
Email: fz002@email.uark.edu

Description: Cloud computing has entered the mainstream of information technology, providing infinite or at least highly elastic scalability in delivery of enterprise applications and services. In this course, we will focus on the architecture of today's cloud computing, the technologies used within them, application development using MapReduce and Spark, and the security risks and management in the cloud.

Prerequisites: CSCE 3613 Operating Systems or instructor consent.

Required: None. Handouts and other course materials will be given in the class.

Text:

Topics

- Introduction to cloud computing
- Architecture of modern cloud data centers
- Network routing and protocols supporting cloud computing
- Case study of commercial clouds
- Programming in MapReduce
- Programming in Spark
- Data security and access control in the cloud
- Cloud security management and design patterns
- Risk management in the cloud computing

Grading: Grades will be assigned on a 100-point scale as follows.

A: 90-100% **AND** the score of Final Exam  $\geq 75$

B: 80-89%

C: 70-79%

D: 60-69%

F: <60%

Course tasks are weighed using the following scale.

Midterm Exam: 20%

Final Exam: 25%

Assignments: 50%

Quizzes: 5%

**Assignment:** Assignments (including homework, programming assignments, and lab assignments) will be given regularly. Unless otherwise noted, all assignments are due at the beginning of class on the due date. If the university is closed due to inclement weather, a new due date will be given by the instructor. NO late assignment is accepted unless it is due to medical issue with a doctor's note.

**Quiz:** Quizzes are frequently given. Quizzes serve two purposes, i.e., (1) encouraging class participation, and (2) quick test of knowledge learned in the class. Quizzes typically last 5-10 minutes.

**Policies:** **Class Participation** – Participation in class is important to its success. Please ask questions and participate in class discussions. When assigning final grades, borderline cases may be decided based on class participation.

**Grading Errors** - If the instructor and the TA have made errors in grading the quiz, the exam or assignment, you have two weeks following the date the item is returned to see us for correcting the problem. After that time, your grade is set and will not be changed. We also request that you wait 24 hours after an exam is returned before coming to us with questions. Assignment corrections should be taken to the TA first.

**Open-book and Open-note Test** – All exams and quizzes are open-book and open-note without electronics and internet access.

**Curving** – Single items such as exams and assignments typically are not curved. The final letter grade may be curved. Whether I curve and how much I curve are at my discretion.

**Office Hours** – I will make every effort to be in my office during scheduled office hours. If there are exceptions, I will let you know as early as possible. TAs maintain their own office hours. You are welcome and encouraged to seek help from either the instructor or the TAs. If you have a conflict with your instructor's office hours, please make an appointment or stop by my office at another time.

**Cheating** – Academic misconduct of any kind will result in a 0 score on the assignment, quiz, or exam. If the offense is serious, your actions will be reported to the department head and you will receive a failing grade in the course. This may also include a formal entry in your academic record. Your assignments, quizzes and exams must be individually prepared. Use of electronic devices, including calculators, cell phones and laptops, are prohibited in the quiz and exam. Please make sure that your cell phones are turned off and your laptop lids are closed in the exams.

**Excuses** – Excusing a missed quiz and exam is left to the discretion of the instructor. Illness, family emergencies, and religious observances are examples of acceptable excuses. Computer down time, over sleeping, and social events are examples of unacceptable excuses. Please try to let us know problems in advance when possible and be prepared to provide verification of your excuse.

**Extensions** – As a policy, we do not extend due dates of assignments. If we choose to do so, we will only announce the extension in class or through email. If you hear an extension has been granted and we have not announced it in class or through email, your information is incorrect.

**Neatness** – we will take points off on any assignment that is not neat and legible. Any code turned in as part of an assignment must be completely documented. If you turn code in undocumented, you will receive a 0 on that part of the assignment.

Academic Integrity: As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail.

Each University of Arkansas student is required to be familiar with and abide by the University's 'Academic Integrity Policy' which may be found at [honesty.uark.edu/policy](http://honesty.uark.edu/policy). Students with questions about how these policies apply to a particular course or assignment should immediately contact their instructor.

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Research paper review: 5%

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**Research Paper Review:** Each student is required to write a review for a cloud computing research paper, to summarize the problem addressed by this paper and contributions of it, and to critically evaluate the intellectual merit, strengths, and weakness of the paper. Keep in mind that paper reviews are not a simple paper summary but the reviewer's thoughts about the paper.

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