San Jose State University
College of Science/Department of Computer Science
CS 268, TOPICS IN WIRELESS MOBILE NETWORKING, Sec 1, Spring 2016

Course and Contact Information

Instructor:	Dr. Melody Moh
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Office Hours:	MW 1120 to 1150 and 1330 to 1400
Class Days/Time:	MW 1200 to 1315
Classroom:	MQH 422
Prerequisites:	CS 158 or instructor consent

Course Description

Advance topics in the area of wireless mobile networking. Content may differ in each offering. Possible topics include though not restricted to: wireless local and metropolitan area networks, mobile Internet, sensor networks, mobile computing, wireless network security. Repeatable when topic changes.

This semester, topics include the following (time permits):
- Introduction and mobile network trends.
- Introduction to wireless coding, modulation, and signal propagation.
- Wireless LAN, wireless PAN, vehicular and regional area networks, gigabit wireless networks.
- Internet of Things (IoT) and Bluetooth.
- Cellular Networks: LTE Advance and 5G.
- Software-defined mobile networks
- Mobile clouds: enabling technologies.
- Mobile clouds: social aspects.
- Mobile clouds: energy efficiency and applications.
- Security issues

Learning Outcomes

Course Learning Outcomes (CLO)
Upon successful completion of this course, students will be able to:
1. **CLO 1 -** Understand the above covered topics through completion of homework, quizzes, and examinations.

2. **CLO 2 -** Successfully complete programming projects on advanced mobile computer networks.
3. **CLO 3 - *Work in a team to complete group projects, including independent research, oral presentation, and programming on one latest advancement in mobile networks.***

Required Texts/Readings

MAJOR REFERENCES

- � Frank H. P. Fitzek and Marcos D. Katz; *Mobile Clouds: Exploiting Distributed Resources in Wireless, Mobile and Social Networks,* 2014, Wiley. ISBN-13: 978-1-118-80140-6 Web ISBN-10: 0-470-97389-7, Print ISBN-13: 978-0-470-97389-7.

- Paul Goransson and Chuck Black, *Software Defined Networks: A Comprehensive Approach, 1st edition*, 2014, Morgan Kaufmann Publishers, Inc., San Francisco. ISBN-13: 978-0124166752, ISBN-10: 012416675X
- (CS 158A textbook) L. Peterson and B. Davie, *Computer Networks: A Systems Approach*, 5th Edition, Morgan Kaufmann Publishers Inc., San Francisco, CA, 2007, ISBN 0123850592
- Other references for specific topics/projects will be given along with topic/project assignments.

Course Requirements and Assignments

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in University Policy S12-3 at http://www.sjsu.edu /senate/docs/S12-3.pdf.

Homework is due typewritten (include source code, but not executable files) by class starting time on the due date. Each assigned problem requires a solution and an explanation (or work) detailing how you arrived at your solution. Cite any outside sources used to solve a problem. When grading an assignment, I may ask for additional information. A subset of the assigned problems will typically be graded.

ASSIGNMENTS
- **HW**:   Weekly homework assignments and several in-class quizzes
- **PROJ:** Several individual and group research and programming projects will span the entire semester
- **Oral Presentation:** Included in projects (PROJ)

EXAMS
One mid-term exams (**Mid)** scheduled approximately at the end of 8th week, and a final exam (**FIN**).

Refer the course website for latest information of homework assignments.

NOTE that University policy F69-24 at http://www.sjsu.edu/senate/docs/F69-24.pdf states the

following:

Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading.

Schedule

For continual updates please check the [course web page](#) at http://www.cs.sjsu.edu/~melody /CS268_16S.html

[Final Exam Schedule](#) at http://info.sjsu.edu/web-dbgen/narr/static/catalog/final-exam-schedule-spring.html

CS 268 final exam is scheduled on Thursday, May 19, at 9:45am.

Grading Policy

- *I will determine letter grades for the course, including +/- grades based on*

Percentage	Grade
92 and above	A
90 - 91	A-
88 - 89	B+
82 - 87	B
80 - 81	B-
78 - 79	C+
72 - 77	C
70 - 71	C-
60 - 69	D
59 and below	F

- *Percentage weight [or point value] assigned to various class assignments*
    - HW - 20%, PROJ- 40%, Mid - 20%, FIN - 20%.
- *No make-up exams will be given and no late assignment will be accepted.*

Note: *All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades.* See [University Policy F13-1](#) at http://www.sjsu.edu/senate/docs/F13-1.pdf for more details.

Classroom Protocol and Other Notes

- **Always start your email subject with �CS268� to get my attention.**
- The pre-requisite to this course (CS 158A or instructor consent) will be monitored.
- **Cheating** will not be tolerable; a ZERO will be given to any cheated assignment/exam, and will be reported to the Department and the University.
- **Wireless laptop** is required. Your laptop must remain closed (preferably in your backpack and not on your desk) until you are informed that it is needed.

- To encourage participation from students, no recording is allowed.
- Students must be respectful of the instructor and other students. For example: turn off **cell phones**.
- Attendance is crucial to doing well on assignments and examinations.
- Students are responsible for all materials distributed and discussed in the class.
- Office hours are on a 90% basis; they may be rescheduled or canceled due to conflicting department/university or other professional meetings.

University Policies

General Expectations, Rights and Responsibilities of the Student

1. As members of the academic community, students accept both the rights and responsibilities incumbent upon all members of the institution. Students are encouraged to familiarize themselves with SJSU policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arises. See University Policy S90–5 at http://www.sjsu.edu/senate /docs/S90-5.pdf. More detailed information on a variety of related topics is available in the SJSU catalog, at http://info.sjsu.edu/web-dbgen/narr/catalog/rec-12234.12506.html. In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor. If such conversation is not possible, or if it does not serve to address the issue, it is recommended that the student contact the Department Chair as a next step.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester Catalog Policies section at http://info.sjsu.edu/static /catalog/policies.html. Add/drop deadlines can be found on the current academic year calendars document on the Academic Calendars webpage at http://www.sjsu.edu/provost/services /academic_calendars/. The Late Drop Policy is available at http://www.sjsu.edu/aars/policies/latedrops /policy/**.** Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the Advising Hub at http://www.sjsu.edu /advising/.

Consent for Recording of Class and Public Sharing of Instructor Material

University Policy S12-7, http://www.sjsu.edu/senate/docs/S12-7.pdf, requires students to obtain instructor�s permission to record the course and the following items to be included in the syllabus:

- �Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor�s permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.�
    - It is suggested that the greensheet include the instructor�s process for granting permission, whether in writing or orally and whether for the whole semester or on a class by class basis.
    - In classes where active participation of students or guests may be on the recording,

permission of those students or guests should be obtained as well.

- ◆ ◆Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent.◆

Academic integrity

Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The University Academic Integrity Policy S07-2 at http://www.sjsu.edu/senate /docs/S07-2.pdf requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The Student Conduct and Ethical Development website is available at http://www.sjsu.edu /studentconduct/.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 at http://www.sjsu.edu /president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the Accessible Education Center (AEC) at http://www.sjsu.edu/aec to establish a record of their disability.

CS 268, Spring 2016, Course Schedule

The schedule is subject to change with fair notice; the notice will be made available in class.

Week	Topics
1	Introduction
2	Trends of wireless mobile networks and applications
3	Physical Layer: Coding, modulation, and signal propagatioin
4	IEEE 802.11 wireless local area networks
5	Wireless protocols for IoT (Internet of Things)
6	Cellular networks: LTE. LTE-A, and 5G
7	Software-defined mobile networks
8	Mobile cloud computing: enabling technologies and architecture
9	Spring break

Week	Topics
10	Mobile cloud computing: energy efficiency and social aspects
12	Applications of wireless mobile networks
13	Security of wireless mobile networks
14	Applications of mobile cloud computing
15	Security of mobile cloud computing
16	Review
Final Exam	Thursday, May19, 9:45am