

CS 1699 : WIRELESS NETWORKS

Term : Spring 2018

Introduction and overview of Wireless Technology

Instructor : Xerandy

COURSE LOGISTICS

COURSE OBJECTIVE

- The objective of the course is to introduce fundamental concepts and issues that are relevant to the design, development of mobile and wireless network technology
 - Main focus on the architecture and protocols of current and emerging wireless technology
 - When useful, quantitative approach may be used

COURSE RESOURCES

- **Course References**

- Textbook

- **William Stallings, Cory Beard**, “*Wireless Communication Networks and Systems*”, *First Edition*, Pearson Higher Education Inc, 2016, ISBN 10: 0-13-359417-3 , 13: 978-0-13-359417-1

- Useful books

- **William Stallings**: “*Wireless Communications and Networks*”, *Second Edition*, Prentice Hall
 - **William Stalling** : “*Data and Computer Communication*”, *Eight edition*, Prentice Hall
 - **James Kurose and Keith Ross** : “*Computer Networking, A Top Down Approach*”, Addison Wesley

- **Course Website**

- Lecture notes, homework assignments, project description, would be provided at following link

- <http://www.cs.pitt.edu/~xex1/WirelessNetw.html>

GRADING POLICY

- **Grading Evaluation**
 - 5 % Quizzes
 - 15 % Homework
 - 20 % Project/Lab-work
 - 30 % Mid-exam
 - 30 % Final examination
- **Grading Scale**

A+	A	A-	B+	B	B-	C+	C	C-	D	F
94-100%	86%-93%	82%-85%	81%-84%	75%-80%	71%-74%	66%-70%	61%-65%	55%-60%	50%-54%	<50%

COURSE POLICIES

- Exam and makeup policy
 - Students are expected to be present for all quizzes. They are also expected to take their exams on time and as scheduled by the instructor.
 - Students who are unable to attend a midterm or a final exam due to extenuating circumstances should contact the instructor immediately. Failure to notify the instructor prior to missing an exam will automatically result in a zero for the exam.
 - Students with legitimate reasons for missing a scheduled exam are required to schedule a makeup exam at the earliest convenient time

COURSE POLICIES

- **Homework policy**

- Students are expected to check the course webpage regularly for announcements, class schedules, lecture notes, homework assignments, reading assignments, and other related course material
- Homework and Project assignments must be turned in at the start of the class period on the date that they are due. Typically, homework is due one week after it is assigned unless otherwise mentioned. Students who are unable to attend the class may drop their homework, prior to the scheduled class time, in the instructor's or TA's office desk in of the Computer Science Department.
- Unless a valid reason is provided and permission is granted by the instructor, prior to the due date, late submissions will not be accepted
- No homework will be accepted after the solution is posted on the website.
- Students are expected and strongly encouraged to actively participate in class discussions

COURSE POLICIES – ACADEMIC INTEGRITY

- Students are expected to comply with the University of Pittsburgh's Policy on Academic Integrity
- Students are encouraged to discuss homework and project assignments, as long as the discussions are limited to gaining understanding.
 - Any other form of collaboration, including sharing homework and project solutions with other students is considered cheating.
 - All acts of cheating will be reported to the appropriate University authority, and all involved parties will fail the course
- Students are strongly encouraged to carefully read, understand and abide by the [Academic Integrity Code](#) for the School of Arts and Sciences.

COURSE POLICIES – DISABILITY AND RELIGIOUS OBSERVANCE

- If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact the instructor and Disability Resources and Services
- To accommodate religious holiday observance, students should inform the instructor by email, within the first two weeks of the term, of any such days which conflict with scheduled class activities

OFFICE HOURS AND IMPORTANT DATES

- **Office Hours**
 - Instructor
 - Tuesday and Thursday, 3 pm to 4 pm
 - Additional hours by appointment
 - Room : 6410
 - Teaching Assistant : Zhang, Mingda
 - Time : TBD
- **Important Dates**
 - Midterm exam: **March 1, 2018**
 - **Final exam**: Last week of the term
 - Exact date will be announced later

COURSE TOPICS

- Introduction - Overview of Wireless Technology
- **Fundamental of Communications**
 - **Transmission Fundamentals**
 - **Communication Network and Switching**
 - Communication Architecture and Protocol
- IEEE 802.11 : Wireless LAN Technology
 - Architecture and Protocol
- IEEE 802.15 & Bluetooth: PAN Technology
 - Architecture and Protocol
- Wireless Mobile Network
 - Cellular Technology : 2G, 3G
 - LTE Technology : architecture and protocol
 - If time permits : 5G Technology
- Mobile Application and Mobile IP