

Syllabus

Mobile Communications and Networks

Course Name	Course type (credit/hours)		전선(3/3)		Course code	
	Target students Division/major/grade		/		Opening semester	
	Class time and classroom		월C(팔407) 수C(팔407)(팔407)			
Reference to this course	Related basic courses					
	Recommended concurrent courses					
	Related advanced courses					
Instructor	Name (title/division)					
	Office Room Number		Office phone Number	2634	e-mail	choiyj@ajou.ac.kr
	Office hours		Homepage address			
Teaching Assistant	Name (title/division)					
	Office Room Number		Office phone Number		e-mail	

1. Introduction

This course deals with overall network architecture and protocols of mobile communications such as LTE-A and 5G in the top-down approach from the application layer to physical layer. The lecture covers all-layer solutions for QoS, radio protocols, mobility, spectrum and radio resource management of LTE-A/5G systems and then key ideas such as MIMO, mmWave, D2D, V2X, and cellular IoT of 5G networks. Students will participate in seminar and project activities.

2. Course Objectives

3. Class types and activities

4. Teaching Method

Lecture Seminar (student presentation) Team project

5. Knowledge and ability required for taking this course

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6. Method of Evaluation

Evaluation Item	The Number of Times	Evaluation Proportion	Remarks
Attendance			
midterm exam			
final exam			
quiz			
presentation			
discussion			
homework			
etc			

Exam 60% Project 20% Seminar 10% Attendance 10%

7. Textbooks

Main/Sub	Title	Writer	Publisher	Publication year
주교재	LTE for UMTS	Harri Holma	Wiley	2011
부교재	4G LTE/LTE-Advanced for Mobile Broadband	Erik Dahlman	Academic Press	2011

8. Lecture Schedule

Week	Lecture contents	Lesson type	Remark
1	Information theory	Lecture and Quiz	
2	Background of 5G	Lecture	
3	Network architecture	Lecture	
4	Network architecture	Lecture	
5	Application layer : LTE services and QoS	Lecture	Project 1
6	Upper layer: LTE-A	Lecture	
7	PHY layer: LTE-A	Lecture	
8	Mid-term exam		
9	PHY layer: LTE-A	Lecture	
10	Interference management	Lecture	Project 2
11	Spectrum management	Lecture	
12	MIMO	Lecture	
13	D2D and V2X	Lecture	
14	Cellular IoT		
15	Seminar		Project 3
16	Final exam		

9. Others