

Course Title	Advanced Digital Communications	Course Code	ELEC741001	Credits	3.0
Department	전자공학부	Semester	20171	Course Categories	전공
Instructor	HAN, DONG SEOG	Hours	월 1A1B 월 2A2B 월 3A3B	Location	IT 대학 1 호관(공대 10 호관)613 IT 대학 1 호관(공대 10 호관)613 IT 대학 1 호관(공대 10 호관)613
Phone/E-mail	** 통합정보시스템 로그인- 수업/성적- 수업- "강의담당교수조회"에서 확인 가능함.				
Office Hours	Just after every lecture	language	영어		

[Syllabus]

Course	Goals and Objectives
	<p>In this lecture, general theories of digital communication systems will be handled from transmission to reception with specific communication specifications. The concepts of channel coding and single carrier modulation will be covered. OFDM and MIMO technologies will also be considered. They are key technologies for recent communication systems.</p> <p>The vehicle communication systems will be covered as an example system. IEEE802.11a and IEEE802.11p PHY's will be handled to make understand theories easily through real systems. They are international standards for wireless LAN and vehicular communications.</p>
	Textbook and other references
	<p>[Text] Lecture notes and Papers</p> <p>[References]</p> <ol style="list-style-type: none"> 1 E. A. Lee and D. G. Messerschmitt, Digital Communication, 3rd ed., Kluwer Academic, 2004. 2 J. G. Proakis, Digital Communications, 4th ed., McGraw-Hill, 2000. 3. 한동석, 원리로 이해하는 통신이론, 한빛아카데미 2015.
	Course Description, Methods, and Materials
	<p>Beam project and whiteboard will be used.</p> <p>Every class may be videotaped to help student's self study.</p>

Assignments, Grading Criteria, Prerequisite Subject
Midterm: 40 % Final exam: 40 % Home Work: 10 % Term Project: 10 %
Notice To Students
<ul style="list-style-type: none"> - The lecture will be delivered in English. - Girl student is permitted to be the leader of team project and induced to make questions at higher frequency. - Same number of questions will be given to female and male students.
Notice To Students with Disabilities
<p>A. Hearing Impaired : first row priority seating, Class transcripts may also be provided.</p> <p>B. Developmentally Challenged : Extended Test Period</p> <p>C. Brain lesions : Extended Test Period, Class transcripts may also be provided</p> <p>D. Visually Impaired : Larger Font test will be provided</p> <p>Other : Aid offered dependant on specific disabilities</p>

[\[Course Lesson Plan \]](#)

no	Course Goals and Objectives	Assignment	Text & Materials	Etc.
1	Introduction, Sampling theory			
2	Fourier Transform, Power spectrum			
3	Baseband communication: Line coding, Pulse shaping			
4	Probabilistic Detection Witenoise Matchedfilter			
5	IEEE8021.11a / IEEE802.11p PHY -DigitalModulationI-BPSK,QAM,D QPSK			
6	Digital Modulation II- CPFSK, GMSK			
7	Channel capacity			

8	Midterm exam			
9	IEEE8021.11a / IEEE802.11p PHY -ChannelCoding&Decoding-Block code			
10	Channel Coding & Decoding- Convolutional code, TCM			
11	Channel equalization- Fading, LMS algorithm			
12	OFDM Technology -IEEE8021.11a/IEEE802.11pPHY			
13	MIMO communications			
14	MIMO communications & LTE			
15	Final Exam			

Cheating, plagiarism, and other dishonest practices will be punished as harshly as Kyungpook National University policies allow. The University specifies that cheating is grounds for dismissal. Penalties less severe may be imposed instead. A list of possible disciplinary actions is given below. Actions by the university:

- Failureincourse
- Suspensionfromuniversityforadesignatedperiod
- Expulsionfromuniversity