COURSE INFORMATON					
Course Title	*Code*	*Semester*	*L+P Hour*	*Credits*	*ECTS*
WIRELESS NETWORKS AND MOBILE SYSTEMS	CSE 578	2	3 + 0	3	7

Prerequisites	

Language of Instruction	English
Course Level	Graduate (Second Cycle Programmes)
Course Type	Elective
Course Coordinator	Prof.Dr. Şebnem Baydere
Instructors	Prof.Dr. Şebnem Baydere, Prof.Dr. Adnan Kavak
Assistants	
Goals	The goal of the course is to teach the basics of wireless communication systems, wireless protocols, wireless networks and mobile systems
Content	Wireless and mobile communication principles, channel models, wireless LANs, ad-hoc and peer-to-peer computational models, short range wireless communications, broadband communication, Cellular networks, satellite networks.

Learning Outcomes	**Program Outcomes**	**Teaching Methods**	**Assessment Methods**
1. Knowledge of digital communication principles	1,2	1,2	A,C
2. Knowledge of wireless communication design principles	2	1,2	A,C
3. Ability to design wireless network protocols	4	1,2	B,D
4. Ability to design, implement and conduct experiments to analyse the performance of a wireless networks	4,5	3	B,D

Teaching Methods:	1: Lecture, 2: Question-Answer, 3: Project
Assessment Methods:	A: Testing, B: Presentation, C: Homework, D: Term Project

COURSE CONTENT		
Week	**Topics**	**Study Materials**
1	Introduction to Wireless Communications	
2	Wireless Communications Principles and Performance Criteria	
3	Modelling Wireless Channels: Shadowing and Fading Models	
4	Channel Capacity, Digital Modulation, Adaptive Modulation	
5	Multi User Systems: Spread Spectrum, CDMA	
6	Wireless Cellular Networks	
7	Satellite Networks	
8	Wireless LANs	
9	Wireless Ad hoc/Sensor Networks	
10	Mobile and Ubiquitous Computing Design Issues	
11-14	Paper Presentations	

RECOMMENDED SOURCES	
Textbook	T.Rappaport, Wireless Communication Principles
Additional Resources	Andreas Molish, Wireless Communications, Wiley

MATERIAL SHARING	
Documents	Research Papers
Assignments	
Exams	

ASSESSMENT		
IN-TERM STUDIES	**NUMBER**	**PERCENTAGE**
Mid-terms	1	36
Presentations	1	36
Assignment	2	5
Term Project	1	23
Total		**100**

CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE	30
CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE	70
Total	**100**

COURSE CATEGORY	Expertise/Field Courses

COURSE'S CONTRIBUTION TO PROGRAM						
No	Program Learning Outcomes	Contribution				
		1	2	3	4	5
1	Knowledge on advanved computer architectures		X			
2	Knowledge on advanced computer system design issues		X			
3	Knowledge on theory of computer science				X	
4	Ability to read, understand, present and critise research work from the liteature.					X
5	Knowledge on advanced telecommunications and next generation computer networks					X

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION			
Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration (Including the exam week: 16x Total course hours)	14	3	42
Hours for off-the-classroom study (Pre-study, practice)	14	1	14
Mid-terms	1	10	10
Presentations	1-2	20	20
Homework	2	10	20
Term Project	1	50	
Final examination	1	20	20
Total Work Load			176
Total Work Load / 25 (h)			7
ECTS Credit of the Course			7