

 Coordinator	  M.Sierra Pérez (UPM-27)									
Involved institution	  									
Name of the course	Antenna Measurements						Type			
							M		D	
Place	UPM- Madrid						Date: 20 – 24 June 2005			
Summary (2000 words)	<p>The course introduces to the problematic of antenna measurement. It describes several antenna measurement systems like open fields and anechoic chambers with: spherical (including Fresnel zone), cylindrical and planar near field measurements and compact range systems.</p> <p>Emphasis will be given in the course to spherical and planar near- field antenna measurements, which constitute the perhaps most accurate technique for experimental characterization of antennas. These techniques form the basis for the DTU- ESA Spherical Near- Field Antenna Test Facility located at the Technical University of Denmark and the LEHA antenna measurement ranges located at UPM. Lectures on spherical wave measurements will be given by DTU.</p> <p>The second part of the course will consist in antenna measurement systems applications: CHALMERS will explain the measurement procedures in reverberation chamber (that simulates effectively a uniform multi-path propagation environment, and it is useful to measure total radiated power and receiver sensitivity of mobile phones and other wireless or mobile terminals -GSM, CDMA, DECT, Bluetooth, UMTS- diversity gain of diversity antennas and channel capacity of MIMO antenna systems). SATIMO will explain its STARGATE system as an example of spherical near field system. UPM will show their systems: compact range, spherical, cylindrical and planar near field systems and a semi anechoic system. Also, millimetre and sub-millimetre antenna measurement techniques will be explained.</p>									
Structure of the course	Lectures	Experimental labs.	Exercises	Total	Credits	Assessment typology				
	20	10	8	38	2	Attendance & Lab: 1 cr Exercise assignment: 1 cr				
Teachers	Name				Organization				Title	
	M.Sierra Castañer				UPM				Prof.	
	M. Calvo Ramón				UPM				Prof.	
	L. de Haro Ariet				UPM				Prof.	
	P. Caballero Almena				UPM				Eng.	
	P-S Kildal				CHALMERS				Prof.	
	Charlie Orlenius				CHALMERS				MSEE	
	O. Breimberg				DTU				Prof.	
	Lars Foged				SATIMO				PhD	
	Antti Räisänen				HUT				Prof.	
Availability of dedicated structures	College rooms		Dedicated Labs		Classrooms		Computer rooms		Canteen	
	yes	not	yes	not	yes	not	yes	not	yes	not
	■		■		■		■		■	