Program	59SC – Telecommunications Systems Engineering B.Eng.

Course code and name	
Code	595000334
Name	Radiocommunication Systems
Semester	S7 [(September-January)]

Credits and contact hours	
ECTS Credits	6
Contact hours	60

Coordinator's name	González Posadas, Vicente [vicente.gonzalez@upm.es]

Specific course information	
Tuition language	Spanish
Description of course content	
Study of radioelectric propagation and communication systems and services using non-guided media. To know the specifications of a service, the quality requirements, the equipment, media and systems used to make this communication possible and the necessary measures to verify these specifications both from a theoretical and experimental point of view, so that the student can analyze, plan, design and manage any Radiocommunication System (Radio links, Broadcasting and T.V., Mobile Services, Satellite Communications, etc.).	
List of topics to be covered	
1. Introduction to Radiocommunication Systems 2. Radiowave Propagation 3. Radio Links 4. Satellite Communication 5. Radio Broadcasting 6. Mobile Communications	
Prerequisites or co-requisites	
– Telecommunication Systems – Digital Signal Processing – Communication Theory	
Course category in the program	
☑ R (required)	**☐ E (elective)** *(elective courses may not be offered every year)*

Specific goals for the course
Specific outcomes of instruction
• CE ST02 Ability to apply techniques on which telecommunication networks, services and applications are based, whether in fixed or mobile environments, personal, local or long distance areas, with different bandwidths, including telephony, radio broadcasting, television and data, from the point of view of transmission systems. • CE ST04 Ability to select radiofrequency, microwave, radio broadcasting, radio link and radio localization circuits, subsystems and systems. • CE ST05 Ability to select aerials, equipment and transmission systems for guided and non-guided wave propagation, through electromagnetic, radiofrequency or optical channels. Ability to manage the associated radio electric space and frequency allocation. • CE TEL01 Ability to independently learn new knowledge and skills adequate for the design, development or utilization of telecommunication systems and services. • CE TEL04 Ability to analyze and specify the fundamental parameters of a communication system. • CE TEL16 Knowledge of telecommunication legislation and regulations at the National, European and International levels. • CG 02 Ability to search and select information, develop critical thinking and produce and defend arguments within the area. • CG 04 Ability to abstract, analyze, and synthesize, and to solve problems. • CG 09 Ability to analyze and assess the social and environmental impact of technical solutions. • CG 10 Ability to handle specifications, rules and regulations and to apply them in the practice of the profession. • CG 13 Learning skills with a high degree of autonomy.

Further reading and supplementary materials
– Hernando Rábanos, J.M, y otros. Transmisión por radio (7ª Edición). Editorial Universitaria Ramón Areces, 2013. – MARAL, Gerard Satellite. Communications Systems: Systems, Techniques and Technology, 5th. Edition. Edit: John Wiley 2009. – Hernando Rábanos, JM. Comunicaciones móviles (3ª Ed.). Editorial Universitaria Ramón Areces, 2015. – http://www.itu.int/pub/R-REC/es – http://www.etsi.org/standards – Moodle.