

| MSTC

Offered by UPM-ETSIT-SSR, the Master of Science in Signal Theory and Communications (MSTC) is a multi-disciplinary program providing graduates the capabilities to join any national or international university for Ph.D. or high-tech company.



The curriculum provides students high comprehension by case studies orientation and personalized guidance with an individual advisor. It also offers balanced theoretical, mathematical capabilities, practical and laboratory skills.

| PROGRAM

The Master degree is structured in three tracks. Two tracks correspond to classical topics representing most of national and international technological activities where our department is leader in Spain. The third track deals with new challenges in signal processing and machine learning for big data. This track is intended to response to current needs highly demanded by different sectors and technological companies.



mstc.ssr.upm.es



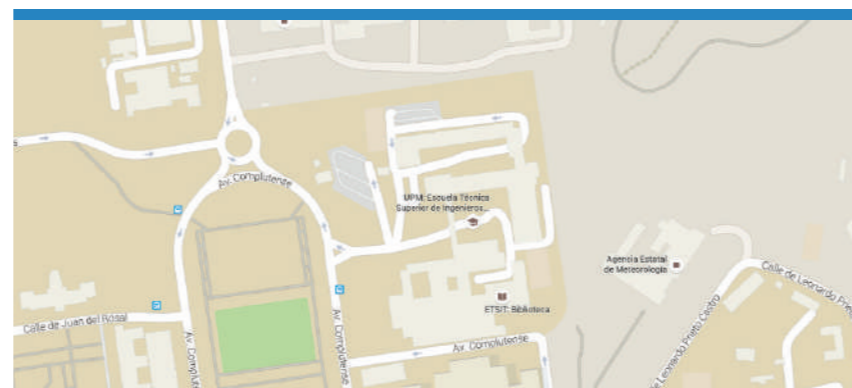
POLITÉCNICA

UPM: ESCUELA TÉCNICA SUPERIOR DE INGENIEROS DE TELECOMUNICACIÓN

📍 Avda. Complutense, 30 - 28040 Madrid

✉ www.etsit.upm.es

☎ 91 336 73 51



MSTC

MASTER IN SIGNAL THEORY
AND COMMUNICATIONS





RF TECHNOLOGIES AND SYSTEMS

Learn about the last advances in radiofrequency technologies and their application to radio communication systems. You will be able to design communication subsystems as transmitters, receivers, synthesizers and antennas.

RADIOCOMMUNICATIONS AND MULTIMEDIA

You will be provided with an integrated profile on Communications and Multimedia, emphasizing most hot technological areas where our department is leading industrial transfer and basic research. Learn about secure communications, next-generation mobile communications, media production, and mixed reality and immersive environments.

SIGNAL PROCESSING AND MACHINE LEARNING FOR BIG DATA

Get the right skills to fulfill the rising demand for analytics professionals and data scientists in a broad range of industrial sectors. The track is designed to cover the scientific foundations and the major technological challenges for extracting knowledge from the increasing number of real-world signals, such as speech, images, movies, music, biological and sensor readings or financial series.

RF TECHNOLOGIES AND SYSTEMS

SEMESTER 1			SEMESTER 2		
Optimization Fundamentals (3C)	Radiofrequency Optimization Techniques (3C)	RF Technologies (6C)	Computational Electromagnetics (6C)	Secure RF Communications (3C)	From Array Processing to MIMO Comms. (6C)
Advanced Topics on Antenna Technologies (6C)	Mobile Communications 4G and beyond (3C)	Design of Comm. Systems and equipment (6C)	Laboratory Course on RF Measurements (6C)	Masters' Thesis (12C)	

RADIOCOMMUNICATIONS AND MULTIMEDIA

SEMESTER 1			SEMESTER 2		
Optimization Fundamentals (3C)	Comms. and Multimedia Optimization Techniques (3C)	Statistical Signal Processing (3C)	Multimedia Signal Processing (4.5C)	Multimedia Content Distribution (4.5C)	From Array Processing to MIMO Comms. (6C)
Information Theory (3C)	Multimedia Representation and Coding (3C)	Design of Comm. Systems and equipment (6C)	Media asset Management and Production (3C)	Secure RF Communications (3C)	Masters' Thesis (12C)
Mixed Reality and Immersive Environments (3C)	Mobile Communications 4G and beyond (3C)				

SIGNAL PROCESSING AND MACHINE LEARNING FOR BIG DATA

SEMESTER 1			SEMESTER 2		
Statistical Modelling (3C)	Time Series Analysis (4.5C)	Optimization Fundamentals (3C)	Signal Processing for Big Data (4C)	Big Data for Image and Video Signals (4C)	Bio-Inspired Learning (3C)
Optimization Techniques for Big Data analysis (3C)	Predictive and Descriptive Learning (6C)	Machine Learning Lab (4.5C)	Reinforcement Learning (3C)	Application Projects (4C)	Masters' Thesis (12C)
Data Science Foundations and Applications (2C)			Large-scale Media Analytics (4C)		

■ Fundamentals
 ■ Signal Processing
 ■ Technologies
 ■ Systems
 ■ Machine Learning
 ■ Applications and Practice

