MSc in Systems and Services Engineering for the Information Society (MSSEIS)

MÁSTER UNIVERSITARIO EN INGENIERÍA DE SISTEMAS Y SERVICIOS PARA LA SOCIEDAD DE LA INFORMACIÓN (MISSSI)

Competencias por asignaturas
Skills to be learned for each subject

Contents

Skills to be learned (learning outcomes) of the programme, Spanish and English / *Competencias del título (español e inglés)*

The skills to be learned in this Master's Programme are of different types: Basic (**CB**.XX), General (**CGEN**.XX), Specific of the Master's programme (**CE**.XX), Specific of the Services Intensification of the programme (**CESE**.XX), and Specific of the Systems Intensification of the programme (**CESI**.XX). In the following table, all the skills included in the validation report of the programme are shown, both in Spanish and in English.

*Las competencias del título de Máster se dividen en distintos tipos: Básicas (**CB.XX**), Generales (**CGEN.XX**), Específicas del programa de Máster (**CE.XX**), Específicas de la Intensificación en Servicios del Máster (**CESE.XX**), y Específicas de la Intensificación en Sistemas del Máster (**CESI.XX**). En la siguiente tabla se muestran todas las competencias definidas en la memoria de verificación del título, tanto en español como en inglés.*

Code *Código*	Type *Tipo*	Competencias (ESP)	Skills to be learned (ENG)
CB.06	Basic *Básica*	Poseer y comprender conocimientos que aporten una base u oportunidad de ser originales en el desarrollo y/o aplicación de ideas, a menudo en un contexto de investigación	To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07	Basic *Básica*	Que los estudiantes sepan aplicar los conocimientos adquiridos y su capacidad de resolución de problemas en entornos nuevos o poco conocidos dentro de contextos más amplios (o multidisciplinares) relacionados con su área de estudio	To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.08	Basic *Básica*	Que los estudiantes sean capaces de integrar conocimientos y enfrentarse a la complejidad de formular juicios a partir de una información que, siendo incompleta o limitada, incluya reflexiones sobre las responsabilidades sociales y éticas vinculadas a la aplicación de sus conocimientos y juicios	To be capable of integrating knowledge and facing the complexity of making judgements that stem from incomplete or limited information which includes reflections on the social and ethical responsibilities of the application of that knowledge and judgement.
CB.09	Basic *Básica*	Que los estudiantes sepan comunicar sus conclusiones y los conocimientos y razones últimas que las sustentan a públicos especializados y no especializados de un modo claro y sin ambigüedades	To be capable of communicating the conclusions, together with the knowledge and reasons behind them, to both specialized and non-specialized audiences, in a clear and unambiguous manner.
CB.10	Basic *Básica*	Que los estudiantes posean las habilidades de aprendizaje que les permitan continuar estudiando de un modo que habrá de ser en gran medida autodirigido o autónomo.	To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.

Code *Código*	Type *Tipo*	Competencias (ESP)	Skills to be learned (ENG)
CGEN.03	General *General*	Capacidad para la elaboración, planificación estratégica, dirección, coordinación y gestión técnica y económica de proyectos en el ámbito de la ingeniería para la Sociedad de la Información siguiendo criterios éticos, de calidad y medioambientales.	To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.
CGEN.04	General *General*	Capacidad para proyectar, calcular y diseñar sistemas y servicios para la Sociedad de la Información.	To be capable of planning, calculating and designing systems and services for the Information Society.
CGEN.05	General *General*	Capacidad para aplicar los principios de la economía y de la gestión de recursos humanos y proyectos, así como la legislación, regulación y normalización en los ámbitos de la ingeniería para la Sociedad de la Información.	To be capable of applying the principles of economy and management of human resources and projects, as well as the legislation, regulation and normalization in the framework of the Information Society engineering.
CGEN.01	General *General*	Capacidad para el trabajo en grupo, dirigir, organizar y supervisar equipos multidisciplinares en entornos internacionales.	To be capable of working in group, as well as leading, organizing and supervising multidisciplinary teams in international environments.
CGEN.02	General *General*	Capacidad para la dirección general, técnica y de proyectos de investigación, desarrollo e innovación, en empresas y centros tecnológicos.	To be capable of carrying out the general and technical management, as well as the management of research, development and innovation projects, in companies and technological centers.
CESE.01	Specific, Services *Específica, Servicios*	Capacidad de analizar y desarrollar técnicas de procesado para la mejora de las señales de audio y vídeo.	To be capable of analyzing and developing processing techniques to enhance audio and video signals.
CESI.01	Specific, Systems *Específica, Sistemas*	Capacidad de caracterizar, diseñar y desplegar sistemas y servicios de comunicaciones inalámbricas.	To be capable of characterizing, designing and deploying wireless communications systems and services.
CESI.02	Specific, Systems *Específica, Sistemas*	Capacidad de analizar y sintetizar circuitos electrónicos para sistemas de comunicaciones.	To be capable of analyzing and synthesizing electronic circuits for communication systems.
CESE.02	Specific, Services *Específica, Servicios*	Capacidad de analizar y diseñar algoritmos de reconocimiento de señales de audio e imagen.	To be capable of analyzing and designing audio and image signal recognition algorithms.
CE.01	Specific *Específica*	Capacidad de analizar, interpretar y aplicar estándares relacionados con las TIC.	To be capable of analyzing, interpreting and applying standards related to the ICT.

Code *Código*	Type *Tipo*	Competencias (ESP)	Skills to be learned (ENG)
CE.02	Specific *Específica*	Capacidad de analizar los servicios de la Sociedad de la Información y los requisitos tecnológicos para su implementación, considerando conceptos de diseño para todos.	To be capable of analyzing the Information Society services as well as the technological requirements for its implementation, considering Design for All concepts.
CE.03	Specific *Específica*	Capacidad de identificar los sistemas de planificación de recursos empresariales y los sistemas de administración de las relaciones con el cliente.	To be capable of identifying the enterprise resource planning systems and the customer relationship management systems.
CE.04	Specific *Específica*	Capacidad de modelado matemático de problemas de ingeniería relacionados con las TIC.	To be capable of carrying out the mathematical modelling of engineering problems related to the ICT.
CE.07	Specific *Específica*	Capacidad de proponer, organizar y ejecutar trabajos de investigación en el ámbito de la ingeniería para la Sociedad de la Información.	To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.
CE.05	Specific *Específica*	Capacidad de integración y síntesis de conocimientos y competencias adquiridas durante las enseñanzas, evidenciándolas mediante la realización de un proyecto fin de máster en el ámbito de los Sistemas o los Servicios para la Sociedad de la Información.	To be capable of integrating and synthesizing the knowledge and skills acquired during the Master studies, through the development of a Final Master Thesis in the area of the systems or the services for the Information Society.
CE.06	Specific *Específica*	Conocimiento adecuado del concepto de empresa con actividades de I+D+i, así como organización y gestión, en el campo científico-tecnológico.	To know adequately the concept of a RDI company, as well as the organization and management, in the scientific and technological area.
CESI.04	Specific, Systems *Específica, Sistemas*	Capacidad de desarrollar sistemas basados en dispositivos programables.	To be capable of developing systems which are based on programmable devices.
CESI.03	Specific, Systems *Específica, Sistemas*	Capacidad de analizar y desarrollar sistemas empotrados integrando sistemas operativos.	To be capable of analyzing and developing embedded systems integrating operating systems.
CESI.05	Specific, Systems *Específica, Sistemas*	Capacidad de implementar sistemas de adquisición de datos y sistemas automáticos de prueba utilizando herramientas avanzadas de instrumentación.	To be capable of implementing data acquisition systems and automated testing systems by using advanced instrumentation tools.
CESE.05	Specific, Services *Específica, Servicios*	Capacidad de desarrollar sistemas que ofrezcan servicios ubicuos y seguros.	To be capable of developing systems that offer ubiquitous and secure services.

Code *Código*	Type *Tipo*	Competencias (ESP)	Skills to be learned (ENG)
CESE.03	Specific, Services *Específica, Servicios*	Capacidad de analizar y desarrollar aplicaciones software y protocolos para sistemas telemáticos avanzados.	To be capable of analyzing and developing software applications and protocols for advanced telematic systems.
CESE.04	Specific, Services *Específica, Servicios*	Capacidad de especificar y diseñar servicios telemáticos avanzados.	To be capable of specifying and designing advanced telematic services.

In the following, the skills in English that are partially learnt for each subject of the Master's programme are specified.

A continuación, se especifican las competencias (en inglés) que se desarrollan parcialmente para cada asignatura del Máster.

Fall semester. Subjects and their associated skills (English) / *Semestre Otoño: asignaturas y competencias en inglés*

I&E THESIS / *TESIS DE INNOVACIÓN Y EMPRENDIMIENTO*

Subject acronym:	I&E
Subject:	I&E THESIS
Acrónimo asignatura:	I&E
Asignatura:	TESIS DE INNOVACIÓN Y EMPRENDIMIENTO
Subject code 59AF: *Código 59AF:*	N/A
Subject code 59AG: *Código 59AG:*	593000420

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.08 - To be capable of integrating knowledge and facing the complexity of making judgements that stem from incomplete or limited information which includes reflections on the social and ethical responsibilities of the application of that knowledge and judgement.

CB.09 - To be capable of communicating the conclusions, together with the knowledge and reasons behind them, to both specialized and non-specialized audiences, in a clear and unambiguous manner.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.
CGEN.04 - To be capable of planning, calculating and designing systems and services for the Information Society.
CGEN.05 - To be capable of applying the principles of economy and management of human resources and projects, as well as the legislation, regulation and normalization in the framework of the Information Society engineering.
CGEN.01 - To be capable of working in group, as well as leading, organizing and supervising multidisciplinary teams in international environments.
CGEN.02 - To be capable of carrying out the general and technical management, as well as the management of research, development and innovation projects, in companies and technological centers.
CE.01 - To be capable of analyzing, interpreting and applying standards related to the ICT.
CE.02 - To be capable of analyzing the Information Society services as well as the technological requirements for its implementation, considering Design for All concepts.
CE.03 - To be capable of identifying the enterprise resource planning systems and the customer relationship management systems.
CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.
CE.06 - To know adequately the concept of a RDI company, as well as the organization and management, in the scientific and technological area.

WIRELESS COMMUNICATIONS / *COMUNICACIONES INALÁMBRICAS*

Subject acronym:	WICOM
Subject:	WIRELESS COMMUNICATIONS
Acrónimo asignatura:	CI
Asignatura:	COMUNICACIONES INALÁMBRICAS
Subject code 59AF: *Código 59AF:*	593000400
Subject code 59AG: *Código 59AG:*	593000421

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CGEN.04 - To be capable of planning, calculating and designing systems and services for the Information Society.
CESI.01 - To be capable of characterizing, designing and deploying wireless communications systems and services.
CESI.02 - To be capable of analyzing and synthesizing electronic circuits for communication systems.
CE.01 - To be capable of analyzing, interpreting and applying standards related to the ICT.
CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.

ADVANCED DIGITAL ARCHITECTURES / *ARQUITECTURAS DIGITALES AVANZADAS*

Subject acronym:	ADA
Subject:	ADVANCED DIGITAL ARCHITECTURES
Acrónimo asignatura:	ADA
Asignatura:	ARQUITECTURAS DIGITALES AVANZADAS
Subject code 59AF: *Código 59AF:*	593000401
Subject code 59AG: *Código 59AG:*	593000422

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.

CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.
CGEN.04 - To be capable of planning, calculating and designing systems and services for the Information Society.
CE.01 - To be capable of analyzing, interpreting and applying standards related to the ICT.
CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.
CESI.03 - To be capable of analyzing and developing embedded systems integrating operating systems.

AUDIO AND VIDEO SIGNAL PROCESSING / *PROCESADO DE SEÑALES DE AUDIO Y VÍDEO*

Subject acronym:	AVSP
Subject:	AUDIO AND VIDEO SIGNAL PROCESSING
Acrónimo asignatura:	PSAV
Asignatura:	PROCESADO DE SEÑALES DE AUDIO Y VÍDEO
Subject code 59AF: *Código 59AF:*	593000402
Subject code 59AG: *Código 59AG:*	593000423

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CESE.01 - To be capable of analyzing and developing processing techniques to enhance audio and video signals.
CESE.02 - To be capable of analyzing and designing audio and image signal recognition algorithms.
CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.

UBIQUITOUS AND SECURE NETWORKS AND SERVICE / *REDES Y SERVICIOS UBICUOS Y SEGUROS*

Subject acronym:	USNS
Subject:	UBIQUITOUS AND SECURE NETWORKS AND SERVICES
Acrónimo asignatura:	RSUS
Asignatura:	REDES Y SERVICIOS UBICUOS Y SEGUROS
Subject code 59AF: *Código 59AF:*	593000403
Subject code 59AG: *Código 59AG:*	593000424

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.
CGEN.04 - To be capable of planning, calculating and designing systems and services for the Information Society.
CE.01 - To be capable of analyzing, interpreting and applying standards related to the ICT.
CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.
CESE.05 - To be capable of developing systems that offer ubiquitous and secure services.

ICT MANAGEMENT IN THE ORGANIZATIONS / *GESTIÓN DE LAS TIC EN LAS ORGANIZACIONES*

Subject acronym:	ICTMAN
Subject:	ICT MANAGEMENT IN THE ORGANIZATIONS
Acrónimo asignatura:	GTO
Asignatura:	GESTIÓN DE LAS TIC EN LAS ORGANIZACIONES
Subject code 59AF: *Código 59AF:*	593000404
Subject code 59AG: *Código 59AG:*	N/A

Skills to be learned
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.
CGEN.05 - To be capable of applying the principles of economy and management of human resources and projects, as well as the legislation, regulation and normalization in the framework of the Information Society engineering.
CGEN.01 - To be capable of working in group, as well as leading, organizing and supervising multidisciplinary teams in international environments.
CGEN.02 - To be capable of carrying out the general and technical management, as well as the management of research, development and innovation projects, in companies and technological centers.
CE.03 - To be capable of identifying the enterprise resource planning systems and the customer relationship management systems.
CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.
CE.06 - To know adequately the concept of a RDI company, as well as the organization and management, in the scientific and technological area.

ICT AND THE INFORMATION SOCIETY / *TIC Y SOCIEDAD DE LA INFORMACIÓN*

Subject acronym:	ICTIS
Subject:	ICT AND THE INFORMATION SOCIETY
Acrónimo asignatura:	TSI
Asignatura:	TIC Y SOCIEDAD DE LA INFORMACIÓN
Subject code 59AF: *Código 59AF:*	593000405
Subject code 59AG: *Código 59AG:*	N/A

Skills to be learned

CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.	
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.	
CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.	
CE.02 - To be capable of analyzing the Information Society services as well as the technological requirements for its implementation, considering Design for All concepts.	
CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.	

DATA MODELLING AND ANALYSIS IN ENGINEERING / *MODELADO Y ANÁLISIS DE DATOS EN INGENIERÍA*

Subject acronym:	DMAE
Subject:	DATA MODELLING AND ANALYSIS IN ENGINEERING
Acrónimo asignatura:	MADI
Asignatura:	MODELADO Y ANÁLISIS DE DATOS EN INGENIERÍA
Subject code 59AF: *Código 59AF:*	593000406
Subject code 59AG: *Código 59AG:*	N/A

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CE.04 - To be capable of carrying out the mathematical modelling of engineering problems related to the ICT.

ADVANCED RESEARCH SEMINARS I / *SEMINARIOS AVANZADOS DE INVESTIGACIÓN I*

Subject acronym:	ARS_I

Subject:	ADVANCED RESEARCH SEMINARS I
Acrónimo asignatura:	SAI_I
Asignatura:	SEMINARIOS AVANZADOS DE INVESTIGACIÓN I
Subject code 59AF: *Código 59AF:*	593000407
Subject code 59AG: *Código 59AG:*	593000425

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.09 - To be capable of communicating the conclusions, together with the knowledge and reasons behind them, to both specialized and non-specialized audiences, in a clear and unambiguous manner.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.
CGEN.05 - To be capable of applying the principles of economy and management of human resources and projects, as well as the legislation, regulation and normalization in the framework of the Information Society engineering.
CE.02 - To be capable of analyzing the Information Society services as well as the technological requirements for its implementation, considering Design for All concepts.
CE.03 - To be capable of identifying the enterprise resource planning systems and the customer relationship management systems.
CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.

INDUSTRY INTERNSHIP I / *PRÁCTICAS EN EMPRESAS I*

Subject acronym:	INTERN_I
Subject:	INDUSTRY INTERNSHIP I
Acrónimo asignatura:	PRACT_I
Asignatura:	PRÁCTICAS EN EMPRESAS I

Subject code 59AF: *Código 59AF:*	593000408
Subject code 59AG: *Código 59AG:*	N/A

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.08 - To be capable of integrating knowledge and facing the complexity of making judgements that stem from incomplete or limited information which includes reflections on the social and ethical responsibilities of the application of that knowledge and judgement.
CB.09 - To be capable of communicating the conclusions, together with the knowledge and reasons behind them, to both specialized and non-specialized audiences, in a clear and unambiguous manner.
CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.
CGEN.04 - To be capable of planning, calculating and designing systems and services for the Information Society.
CGEN.05 - To be capable of applying the principles of economy and management of human resources and projects, as well as the legislation, regulation and normalization in the framework of the Information Society engineering.
CGEN.01 - To be capable of working in group, as well as leading, organizing and supervising multidisciplinary teams in international environments.
CGEN.02 - To be capable of carrying out the general and technical management, as well as the management of research, development and innovation projects, in companies and technological centers.
CE.06 - To know adequately the concept of a RDI company, as well as the organization and management, in the scientific and technological area.

Spring semester. Subjects and their associated skills (English) / *Semestre Primavera: asignaturas y competencias en inglés*

RF ELECTRONIC DESIGN / *DISEÑO ELECTRÓNICO PARA SISTEMAS DE RF*

Subject acronym:	RFED
Subject:	RF ELECTRONIC DESIGN

Acrónimo asignatura:	DERF
Asignatura:	DISEÑO ELECTRÓNICO PARA SISTEMAS DE RF
Subject code 59AF: *Código 59AF:*	593000412
Subject code 59AG: *Código 59AG:*	N/A

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.
CGEN.04 - To be capable of planning, calculating and designing systems and services for the Information Society.
CESI.01 - To be capable of characterizing, designing and deploying wireless communications systems and services.
CESI.02 - To be capable of analyzing and synthesizing electronic circuits for communication systems.
CE.01 - To be capable of analyzing, interpreting and applying standards related to the ICT.
CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.

SIGNAL PROCESSING TECHNIQUES FOR COMMUNICATIONS / *TÉCNICAS AVANZADAS DE PROCESADO DE SEÑAL*

Subject acronym:	SPTC
Subject:	SIGNAL PROCESSING TECHNIQUES FOR COMMUNICATIONS
Acrónimo asignatura:	TAPS
Asignatura:	TÉCNICAS AVANZADAS DE PROCESADO DE SEÑAL
Subject code 59AF: *Código 59AF:*	593000409

| Subject code 59AG:
Código 59AG: | 593000426 |

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.
CGEN.04 - To be capable of planning, calculating and designing systems and services for the Information Society.
CESI.01 - To be capable of characterizing, designing and deploying wireless communications systems and services.
CE.01 - To be capable of analyzing, interpreting and applying standards related to the ICT.
CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.
CESI.04 - To be capable of developing systems which are based on programmable devices.

ADVANCED VIRTUAL INSTRUMENTATION SYSTEMS / *SISTEMAS AVANZADOS DE INSTRUMENTACIÓN VIRTUAL*

Subject acronym:	AVIS
Subject:	ADVANCED VIRTUAL INSTRUMENTATION SYSTEMS
Acrónimo asignatura:	SAIV
Asignatura:	SISTEMAS AVANZADOS DE INSTRUMENTACIÓN VIRTUAL
Subject code 59AF: *Código 59AF:*	593000410
Subject code 59AG: *Código 59AG:*	N/A

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.

CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.
CGEN.04 - To be capable of planning, calculating and designing systems and services for the Information Society.
CE.01 - To be capable of analyzing, interpreting and applying standards related to the ICT.
CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.
CESI.05 - To be capable of implementing data acquisition systems and automated testing systems by using advanced instrumentation tools.

EMBEDDED SYSTEMS / *SISTEMAS EMPOTRADOS*

Subject acronym:	ES
Subject:	EMBEDDED SYSTEMS
Acrónimo asignatura:	SE
Asignatura:	SISTEMAS EMPOTRADOS
Subject code 59AF: *Código 59AF:*	593000411
Subject code 59AG: *Código 59AG:*	593000427

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.

CGEN.04 - To be capable of planning, calculating and designing systems and services for the Information Society.
CE.01 - To be capable of analyzing, interpreting and applying standards related to the ICT.
CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.
CESI.04 - To be capable of developing systems which are based on programmable devices.
CESI.03 - To be capable of analyzing and developing embedded systems integrating operating systems.

SIGNAL RECOGNITION TECHNIQUES / *TÉCNICAS DE RECONOCIMIENTO DE SEÑAL*

Subject acronym:	SRT
Subject:	SIGNAL RECOGNITION TECHNIQUES
Acrónimo asignatura:	TRS
Asignatura:	TÉCNICAS DE RECONOCIMIENTO DE SEÑAL
Subject code 59AF: *Código 59AF:*	593000417
Subject code 59AG: *Código 59AG:*	N/A

Skills to be learned
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.
CGEN.04 - To be capable of planning, calculating and designing systems and services for the Information Society.
CESE.01 - To be capable of analyzing and developing processing techniques to enhance audio and video signals.
CESE.02 - To be capable of analyzing and designing audio and image signal recognition algorithms.
CE.01 - To be capable of analyzing, interpreting and applying standards related to the ICT.

CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.

ADVANCED AUDIOVISUAL CODING / *CODIFICACIÓN AUDIOVISUAL AVANZADA*

Subject acronym:	AAC
Subject:	ADVANCED AUDIOVISUAL CODING
Acrónimo asignatura:	CAA
Asignatura:	CODIFICACIÓN AUDIOVISUAL AVANZADA
Subject code 59AF: *Código 59AF:*	593000413
Subject code 59AG: *Código 59AG:*	N/A

Skills to be learned
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.
CGEN.04 - To be capable of planning, calculating and designing systems and services for the Information Society.
CESE.01 - To be capable of analyzing and developing processing techniques to enhance audio and video signals.
CE.01 - To be capable of analyzing, interpreting and applying standards related to the ICT.
CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.

TELEMATIC SERVICES FOR THE INFORMATION SOCIETY / *SERVICIOS TELEMÁTICOS PARA LA SOCIEDAD DE LA INFORMACIÓN*

Subject acronym:	TSIS
Subject:	TELEMATIC SERVICES FOR THE INFORMATION SOCIETY
Acrónimo asignatura:	STSI
Asignatura:	SERVICIOS TELEMÁTICOS PARA LA SOCIEDAD DE LA INFORMACIÓN

Subject code 59AF: *Código 59AF:*	593000416
Subject code 59AG: *Código 59AG:*	N/A

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CE.01 - To be capable of analyzing, interpreting and applying standards related to the ICT.
CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.
CESE.04 - To be capable of specifying and designing advanced telematic services.

SERVICES AND PROTOCOLS ENGINEERING / *INGENIERÍA DE SERVICIOS Y PROTOCOLOS*

Subject acronym:	SPE
Subject:	SERVICES AND PROTOCOLS ENGINEERING
Acrónimo asignatura:	ISP
Asignatura:	INGENIERÍA DE SERVICIOS Y PROTOCOLOS
Subject code 59AF: *Código 59AF:*	593000414
Subject code 59AG: *Código 59AG:*	N/A

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CE.01 - To be capable of analyzing, interpreting and applying standards related to the ICT.

CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.

CESE.03 - To be capable of analyzing and developing software applications and protocols for advanced telematic systems.

CESE.04 - To be capable of specifying and designing advanced telematic services.

ADVANCED RESEARCH SEMINARS II / *SEMINARIOS AVANZADOS DE INVESTIGACIÓN II*

Subject acronym:	ARS_II
Subject:	ADVANCED RESEARCH SEMINARS II
Acrónimo asignatura:	SAI_II
Asignatura:	SEMINARIOS AVANZADOS DE INVESTIGACIÓN II
Subject code 59AF: *Código 59AF:*	593000415
Subject code 59AG: *Código 59AG:*	N/A

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.09 - To be capable of communicating the conclusions, together with the knowledge and reasons behind them, to both specialized and non-specialized audiences, in a clear and unambiguous manner.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.
CGEN.05 - To be capable of applying the principles of economy and management of human resources and projects, as well as the legislation, regulation and normalization in the framework of the Information Society engineering.
CE.02 - To be capable of analyzing the Information Society services as well as the technological requirements for its implementation, considering Design for All concepts.
CE.03 - To be capable of identifying the enterprise resource planning systems and the customer relationship management systems.

CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.

INDUSTRY INTERNSHIP II / *PRÁCTICAS EN EMPRESAS II*

Subject acronym:	INTERN_II
Subject:	INDUSTRY INTERNSHIP II
Acrónimo asignatura:	PRACT_II
Asignatura:	PRÁCTICAS EN EMPRESAS II
Subject code 59AF: *Código 59AF:*	593000418
Subject code 59AG: *Código 59AG:*	N/A

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.08 - To be capable of integrating knowledge and facing the complexity of making judgements that stem from incomplete or limited information which includes reflections on the social and ethical responsibilities of the application of that knowledge and judgement.
CB.09 - To be capable of communicating the conclusions, together with the knowledge and reasons behind them, to both specialized and non-specialized audiences, in a clear and unambiguous manner.
CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.
CGEN.04 - To be capable of planning, calculating and designing systems and services for the Information Society.
CGEN.05 - To be capable of applying the principles of economy and management of human resources and projects, as well as the legislation, regulation and normalization in the framework of the Information Society engineering.
CGEN.01 - To be capable of working in group, as well as leading, organizing and supervising multidisciplinary teams in international environments.
CGEN.02 - To be capable of carrying out the general and technical management, as well as the management of research, development and innovation projects, in companies and technological centers.

CE.06 - To know adequately the concept of a RDI company, as well as the organization and management, in the scientific and technological area.

MASTER THESIS / *TRABAJO FIN DE MÁSTER*

Subject acronym:	THESIS
Subject:	MASTER THESIS
Acrónimo asignatura:	TFM
Asignatura:	TRABAJO FIN DE MÁSTER
Subject code 59AF: *Código 59AF:*	593000419
Subject code 59AG: *Código 59AG:*	593000429

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.08 - To be capable of integrating knowledge and facing the complexity of making judgements that stem from incomplete or limited information which includes reflections on the social and ethical responsibilities of the application of that knowledge and judgement.
CB.09 - To be capable of communicating the conclusions, together with the knowledge and reasons behind them, to both specialized and non-specialized audiences, in a clear and unambiguous manner.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.
CGEN.04 - To be capable of planning, calculating and designing systems and services for the Information Society.
CGEN.05 - To be capable of applying the principles of economy and management of human resources and projects, as well as the legislation, regulation and normalization in the framework of the Information Society engineering.
CGEN.02 - To be capable of carrying out the general and technical management, as well as the management of research, development and innovation projects, in companies and technological centers.

CESE.01 - To be capable of analyzing and developing processing techniques to enhance audio and video signals.
CESI.01 - To be capable of characterizing, designing and deploying wireless communications systems and services.
CESI.02 - To be capable of analyzing and synthesizing electronic circuits for communication systems.
CESE.02 - To be capable of analyzing and designing audio and image signal recognition algorithms.
CE.01 - To be capable of analyzing, interpreting and applying standards related to the ICT.
CE.02 - To be capable of analyzing the Information Society services as well as the technological requirements for its implementation, considering Design for All concepts.
CE.03 - To be capable of identifying the enterprise resource planning systems and the customer relationship management systems.
CE.04 - To be capable of carrying out the mathematical modelling of engineering problems related to the ICT.
CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.
CE.05 - To be capable of integrating and synthesizing the knowledge and skills acquired during the Master studies, through the development of a Final Master Thesis in the area of the systems or the services for the Information Society.
CE.06 - To know adequately the concept of a RDI company, as well as the organization and management, in the scientific and technological area.
CESI.04 - To be capable of developing systems which are based on programmable devices.
CESI.03 - To be capable of analyzing and developing embedded systems integrating operating systems.
CESI.05 - To be capable of implementing data acquisition systems and automated testing systems by using advanced instrumentation tools.
CESE.05 - To be capable of developing systems that offer ubiquitous and secure services.
CESE.03 - To be capable of analyzing and developing software applications and protocols for advanced telematic systems.
CESE.04 - To be capable of specifying and designing advanced telematic services.

MASTER THESIS WORK SUPPLEMENT / *SUPLEMENTO AL TRABAJO FIN DE MÁSTER*

Subject acronym:	THESIS_SUPP
Subject:	MASTER THESIS WORK SUPPLEMENT

Acrónimo asignatura:	SUP_TFM
Asignatura:	SUPLEMENTO AL TRABAJO FIN DE MÁSTER
Subject code 59AF: *Código 59AF:*	N/A
Subject code 59AG: *Código 59AG:*	593000428

Skills to be learned
CB.06 - To have knowledge that provides the basis or the opportunity of being original to develop and/or to apply ideas, usually in a research context.
CB.07 - To be capable of applying the students' acquired knowledge, as well as their problem solving abilities, to new or not well-known environments in broader (or multidisciplinary) contexts that are in the framework of their expertise area.
CB.08 - To be capable of integrating knowledge and facing the complexity of making judgements that stem from incomplete or limited information which includes reflections on the social and ethical responsibilities of the application of that knowledge and judgement.
CB.09 - To be capable of communicating the conclusions, together with the knowledge and reasons behind them, to both specialized and non-specialized audiences, in a clear and unambiguous manner.
CB.10 - To have the learning abilities to continue studying in a mostly self-guided or autonomous manner.
CGEN.03 - To be capable of elaborating, planning strategically, leading, coordinating and managing, both technically and economically, projects in the framework of the Information Society engineering, according to ethical, quality and environmental criteria.
CGEN.04 - To be capable of planning, calculating and designing systems and services for the Information Society.
CGEN.05 - To be capable of applying the principles of economy and management of human resources and projects, as well as the legislation, regulation and normalization in the framework of the Information Society engineering.
CGEN.02 - To be capable of carrying out the general and technical management, as well as the management of research, development and innovation projects, in companies and technological centers.
CESE.01 - To be capable of analyzing and developing processing techniques to enhance audio and video signals.
CESI.01 - To be capable of characterizing, designing and deploying wireless communications systems and services.
CESI.02 - To be capable of analyzing and synthesizing electronic circuits for communication systems.

CESE.02 - To be capable of analyzing and designing audio and image signal recognition algorithms.
CE.01 - To be capable of analyzing, interpreting and applying standards related to the ICT.
CE.02 - To be capable of analyzing the Information Society services as well as the technological requirements for its implementation, considering Design for All concepts.
CE.03 - To be capable of identifying the enterprise resource planning systems and the customer relationship management systems.
CE.04 - To be capable of carrying out the mathematical modelling of engineering problems related to the ICT.
CE.07 - To be capable of proposing, organizing and executing research works in the framework of the Information Society engineering.
CE.05 - To be capable of integrating and synthesizing the knowledge and skills acquired during the Master studies, through the development of a Final Master Thesis in the area of the systems or the services for the Information Society.
CE.06 - To know adequately the concept of a RDI company, as well as the organization and management, in the scientific and technological area.
CESI.04 - To be capable of developing systems which are based on programmable devices.
CESI.03 - To be capable of analyzing and developing embedded systems integrating operating systems.
CESI.05 - To be capable of implementing data acquisition systems and automated testing systems by using advanced instrumentation tools.
CESE.05 - To be capable of developing systems that offer ubiquitous and secure services.
CESE.03 - To be capable of analyzing and developing software applications and protocols for advanced telematic systems.
CESE.04 - To be capable of specifying and designing advanced telematic services.