LEARNING GUIDE

COMMUNICATION SYSTEMS

MÁSTER EN INGENIERÍA DE TELECOMUNICACIÓN

ACADEMIC YEAR	CODE	COURSE	CREDITS	TYPE	SEMESTER
2026-27	93001368	1	5 ECTS	COMPULSORY	FIRST SEMESTER

LANGUAGE	ASSIGNED CENTER
ENGLISH, SPANISH	E.T.S. DE INGENIEROS DE TELECOMUNICACION

ASSIGNED DEPARTMENT

SEÑALES, SISTEMAS Y RADIOCOMUNICACIONES

COORDINATOR

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REQUIRED PREREQUISITES

REQUIRED COURSES

—

RECOMMENDED PRIOR KNOWLEDGE

RECOMMENDED COURSES

—

OTHER RECOMMENDATIONS

—

RESULTS

RD-822/2021

Knowledge

KG1 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

Skills

HG2 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

HE1 Capacidad para aplicar métodos de la teoría de la información, la modulación adaptativa y codificación de canal, así como técnicas avanzadas de procesado digital de señal a los sistemas de comunicaciones y audiovisuales

HE13 Capacidad para aplicar conocimientos avanzados de fotónica y optoelectrónica, así como electrónica de alta frecuencia

HE3 Capacidad para implementar sistemas por cable, línea, satélite en entornos de comunicaciones fijas y móviles

Competences

CE12 Capacidad para utilizar dispositivos lógicos programables, así como para diseñar sistemas electrónicos avanzados, tanto analógicos como digitales. Capacidad para diseñar componentes de comunicaciones como por ejemplo encaminadores, conmutadores, concentradores, emisores y receptores en diferentes bandas

CG4 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

CT5 Capacidad para gestionar la información, identificando las fuentes necesarias, los principales tipos de documentos técnicos y científicos, de una manera adecuada y eficiente

CG5 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

CE2 Capacidad para desarrollar sistemas de radiocomunicaciones: diseño de antenas, equipos y subsistemas, modelado de canales, cálculo de enlaces y planificación

CT4	Capacidad para trabajar de forma efectiva como individuo, organizando y planificando su propio trabajo, de forma independiente o como miembro de un equipo
CT3	Capacidad para adoptar soluciones creativas que satisfagan adecuadamente las diferentes necesidades planteadas
CE4	Capacidad para diseñar y dimensionar redes de transporte, difusión y distribución de señales multimedia
CE5	Capacidad para diseñar sistemas de radionavegación y de posicionamiento, así como los sistemas radar
CT1	Capacidad para comprender los contenidos de documentación en lengua inglesa
CT2	Capacidad para dinamizar y liderar equipos de trabajo multidisciplinares

DESCRIPTION

Introduction

"Communications systems" will present the types of systems most common and used today, oriented to the lower layers of a communication system, but also will explain the interrelation with the upper layers and architectures of the systems, explained in other subjects of the program.

The course covers the knowledge necessary for a MSc telecommunications engineer concerning the current, as well as trends and future systems that will come to market in 5-10 years. These communication systems will be presented as cases, which will be intertwined with the aim of proving the student with the sufficient knowledge to be able to design and dimension, in a practical way, such communication systems.

Organization:

The course will cover 3 use cases:

- Novel satellite communication systems and positioning

- New fixed communication systems (optical and electrical)

- New mobile communication systems and the Internet of Things

The cases will be presented with focus in the main elements and technologies, leaving a deeper analysis for the 2nd course of MUIT.

Methodology

The subject will include 3 different aspects to allow students to acquire the knowledge required

- Theoretical and practical lectures

- Laboratories

- Project in groups: students in will team-up to solve a real case covering technical and economical aspects of a selected communication systems, involving all use cases, and will present the results (written and orally).

Language:

English and Spanish

TOPICS

1. Introduction to the communication systems, its design and dimensioning

- 1.1. Types and organization of communication systems
- 1.2. Key parameters for the design of integrated communication networks (fixed, mobile, satellite, IoT, etc.)
- 1.3. Network dimensioning, key concepts of access and backbone networks, and current communication networks
- 1.4. Modeling network parameters according to service requirements (traffic, delay, availability, technology selection, usage duration, etc.)

2. Mobile communication systems: 5G and beyond

- 2.1. Spectrum regulation, standardization, and link and coverage planning
- 2.2. Characterization of the multipath propagation channel; introduction to 5G technology.
- 2.3. Structure and operation of radio access networks. Spectral efficiency and network dimensioning
- 2.4. Application of Data and AI in Mobile Communication Network Analysis

3. IoT networks (as part or separated from 5G networks)

- 3.1. IoT in 5G and beyond
- 3.2. Short- and Long-Range Systems for Sensors and IoT in Unlicensed Spectrum Bands
- 3.3. Standards and M2M communication

4. Satellite communication systems

- 4.1. Characterization and Specification

ACTIVITIES

Assessment activity Learning activity

Subject presentation and introduction. Relationship with other subjects. Topic 1.1

WEEKS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	GROUP
In person	00h 30m	Classroom (scheduled)	Normal

TOPICS: T1

METHODOLOGY: Lecture

1.2.

WEEKS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	GROUP
In person	00h 40m	Classroom (scheduled)	Normal

TOPICS: T1

METHODOLOGY: Lecture

1.2

WEEKS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	GROUP
In person	02h 20m	Classroom (scheduled)	Normal

TOPICS: T1

METHODOLOGY: Lecture

1.3

WEEKS: 1 **2** 3 4 5 6 7 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	GROUP
In person	01h 10m	Classroom (scheduled)	Normal

TOPICS
T1

METHODOLOGY
Lecture

1.4

WEEKS: 1 **2** 3 4 5 6 7 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	GROUP
In person	02h 20m	Classroom (scheduled)	Normal

TOPICS
T1

METHODOLOGY
Lecture

2.1

WEEKS: 1 2 **3** 4 5 6 7 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	GROUP
In person	01h 10m	Classroom (scheduled)	Normal

TOPICS
T2

METHODOLOGY
Lecture

2.2

WEEKS: 1 2 **3** 4 5 6 7 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	GROUP
In person	02h 20m	Classroom (scheduled)	Normal

TOPICS
T2

METHODOLOGY
Lecture

2.3

WEEKS 1 2 3 **4** 5 6 7 8 9 10 11 12 13 14 15 E

FORMAT: Not in person, without teacher
TOTAL DURATION: 01h 10m
GROUP: Normal

TOPICS: T2

METHODOLOGY: Lecture

2.3

WEEKS 1 2 3 **4** 5 6 7 8 9 10 11 12 13 14 15 E

FORMAT: In person
TOTAL DURATION: 02h 20m
LOCATION: Classroom (scheduled)
GROUP: Normal

TOPICS: T2

METHODOLOGY: Lecture

2.4

WEEKS 1 2 3 4 **5** 6 7 8 9 10 11 12 13 14 15 E

FORMAT: In person
TOTAL DURATION: 01h 10m
LOCATION: Classroom (scheduled)
GROUP: Normal

TOPICS: T2

METHODOLOGY: Lecture

Project presentation

WEEKS 1 2 3 4 **5** 6 7 8 9 10 11 12 13 14 15 E

FORMAT: In person
TOTAL DURATION: 02h 20m
LOCATION: Classroom (scheduled)
GROUP: Normal

TOPICS: T5

METHODOLOGY: Lecture

2.4

WEEKS: 1 2 3 4 5 **6** 7 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	GROUP
In person	01h 10m	Classroom (scheduled)	Normal

TOPICS: T3

METHODOLOGY: Problem-solving class

Laboratorio de planificación radio

WEEKS: 1 2 3 4 5 **6** 7 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	GROUP
In person	02h 20m	Laboratory	Reduced

TOPICS: T2

METHODOLOGY: Laboratory assignments

Entrega actividades de laboratorio / Laboratory deliverable

WEEKS: 1 2 3 4 5 **6** 7 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	ASSESSMENT	WEIGHT	MINIMUM GRADE
Not in person, without teacher	00h 10m	Progressive	5%	4

TOPICS: T2

METHODOLOGY: Other assessment

ASSESSED OUTCOMES: CE4 CG4 CT1 CT4

3.1, 3.2 3.3

WEEKS: 1 2 3 4 5 6 **7** 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	GROUP
In person	03h 30m	Classroom (scheduled)	Normal

TOPICS: T3

METHODOLOGY: Lecture

Exercises chapters 2 and 3

WEEKS: 1 2 3 4 5 6 7 **8** 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	GROUP
In-person	01h 10m	Classroom (scheduled)	Normal

TOPICS: T3 T2

METHODOLOGY: Problem-solving class

Laboratory chapters 2 and 3

WEEKS: 1 2 3 4 5 6 7 **8** 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	GROUP
In-person	02h 20m	Laboratory	Reduced

TOPICS: T3 T2

METHODOLOGY: Laboratory assignments

Entrega actividades de laboratorio / Laboratory deliverable

WEEKS: 1 2 3 4 5 6 7 **8** 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	ASSESSMENT	WEIGHT	MINIMUM GRADE
Not in person, without teacher	00h 10m	Progressive	5%	4

TOPICS: T2 T3

METHODOLOGY: Other assessment

ASSESSED OUTCOMES: CT3 CT5

4.1 y 4.2

WEEKS: 1 2 3 4 5 6 7 8 **9** **10** **11** 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	GROUP
In-person	10h 30m	Classroom (scheduled)	Normal

TOPICS: T4

METHODOLOGY: Problem-solving class Lecture

Presentación parcial y final del proyecto en clase. Y entrega memoria proyecto / Intermediate and Final project presentation and final report delivery

WEEKS: 1 2 3 4 5 6 7 8 9 10 11 **12** 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	ASSESSMENT	WEIGHT	MINIMUM GRADE
In person	03h 10m	Classroom (scheduled)	Progressive	40%	4 Non-rec.

RECOVERABLE: No

JUSTIFICATION: The group work activity requires continuous supervision and monitoring throughout the semester. In addition, it must be presented as a group and assessed on competencies that cannot be evaluated individually

TOPICS: T5

METHODOLOGY: Group presentation, Team project

ASSESSED OUTCOMES: CE2, CE4, CG4, CG5, CT2, CT3, CT4, CT5

Presentación parcial del proyecto

WEEKS: 1 2 3 4 5 6 7 8 9 10 11 **12** 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	GROUP
In person	02h 20m	Classroom (scheduled)	Reduced

TOPICS: T5

METHODOLOGY: Challenge-based learning

Presentación parcial y final del proyecto en clase. Y entrega memoria proyecto / Intermediate and Final project presentation and final report delivery

WEEKS: 1 2 3 4 5 6 7 8 9 10 11 12 **13** 14 15 E

FORMAT	TOTAL DURATION	LOCATION	ASSESSMENT	WEIGHT	MINIMUM GRADE
In person	02h 20m	Classroom (scheduled)	Global	40%	5

TOPICS: T5

METHODOLOGY: Group presentation, Team project

ASSESSED OUTCOMES: CE2, CE4, CG4, CG5, CT2, CT3, CT4, CT5, HE1, HG2, CE12, KG1, HE13, HE3, CE5, CT1

Examen escrito: teoría y ejercicios / Written exam: theory and exercises

WEEKS: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	ASSESSMENT	WEIGHT	MINIMUM GRADE
In person	02h 30m	Other	Retake (Extraordinary)	50%	4

METHODOLOGY
Other assessment

ASSESSED OUTCOMES
CE2 CE4 CG4 CG5 CT2 CT3 CT4 CT5

Recuperación de laboratorios si se han realizado / repeat laboratory exercise (cada uno puede repetirse individualmente)

WEEKS: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	ASSESSMENT	WEIGHT	MINIMUM GRADE
In person	04h 00m	Other	Retake (Extraordinary)	10%	4

METHODOLOGY
Problem-solving exam

ASSESSED OUTCOMES
CE4

Presentaciones intermedias y final del proyecto en clase (si se ha realizado en su tiempo). Y entrega memoria proyecto / Intermediate and final project presentation and final report delivery

WEEKS: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	ASSESSMENT	WEIGHT	MINIMUM GRADE
In person	02h 00m	Exam Classroom	Retake (Extraordinary)	40%	5

TOPICS
T5

METHODOLOGY
Group presentation Team project

ASSESSED OUTCOMES
CE2 CE4 CG4 CG5 CT2 CT3 CT4 CT5 HE3 HG2 HE1

Written exam: theory and exercises

WEEKS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	ASSESSMENT	WEIGHT	MINIMUM GRADE
In person	03h 00m	Other	Progressive	45%	4

TOPICS
T1 T2 T3 T4

METHODOLOGY
Written exam

ASSESSED OUTCOMES
CE4 CG4 CG5 CT3 CT5

Examen escrito: teoría y ejercicios / Written exam: theory and exercises

WEEKS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	ASSESSMENT	WEIGHT	MINIMUM GRADE
In person	03h 00m	Other	Global	45%	4

METHODOLOGY
Written exam

ASSESSED OUTCOMES
CE2 CE4 CG4 CG5 CT2 CT3 CT4 CT5

Examen de laboratorios si se han realizado / repeat laboratory exercise (cada uno puede evaluarse individualmente)

WEEKS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	ASSESSMENT	WEIGHT	MINIMUM GRADE
In person	03h 00m	Laboratory	Global	15%	4

TOPICS
T2 T3 T4

METHODOLOGY
Problem-solving exam

ASSESSED OUTCOMES
CE2 CT3

SATCOM lab

WEEKS: 1 2 3 4 5 6 7 8 9 10 11 **12** 13 14 15 E

FORMAT	TOTAL DURATION	LOCATION	GROUP
In-person	02h 20m	Laboratory	Reduced

TOPICS: T4

METHODOLOGY: Laboratory assignments

Assessment SATCOM lab

WEEKS: 1 2 3 4 5 6 7 8 9 10 11 **12** 13 14 15 E

FORMAT	TOTAL DURATION	ASSESSMENT	WEIGHT	MINIMUM GRADE
Not in person, without teacher	00h 20m	Progressive	5%	4

TOPICS: T5

METHODOLOGY: Problem-solving exam

ASSESSED OUTCOMES: HE3 HG2 CE2 CE5 CT5

WEEKLY SCHEDULE

Assessment activity | Learning activity | • Week with activity | E Exam period

Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	E
Subject presentation and introduction. Relationship with other subjects. Topic 1.1	•															
1.2.	•															
1.2	•															
1.3		•														
1.4		•														
2.1			•													

Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	E
2.2			•													
2.3				•												
2.3				•												
2.4					•											
Project presentation					•											
2.4						•										
Laboratorio de planificación radio						•										
Entrega actividades de laboratorio / Laboratory deliverable						•										
3.1, 3.2 3.3							•									
Exercises chapters 2 and 3								•								
Laboratory chapters 2 and 3								•								
Entrega actividades de laboratorio / Laboratory deliverable								•								
4.1 y 4.2									•	•	•					
Presentación parcial y final del proyecto en clase. Y entrega memoria proyecto / Intermediate and Final project presentation and final report delivery												•				
Presentación parcial del proyecto												•				
Presentación parcial y final del proyecto en clase. Y entrega memoria proyecto / Intermediate and Final project presentation and final report delivery													•			
Examen escrito: teoría y ejercicios / Written exam: theory and exercises																•

Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	E
Recuperación de laboratorios si se han realizado / repeat laboratory exercise (cada uno puede repetirse individualmente)																•
Presentaciones intermedias y final del proyecto en clase (si se ha realizado en su tiempo). Y entrega memoria proyecto / Intermediate and final project presentation and final report delivery																•
Written exam: theory and exercises																•
Examen escrito: teoría y ejercicios / Written exam: theory and exercises																•
Examen de laboratorios si se han realizado / repeat laboratory exercise (cada uno puede evaluarse individualmente)																•
SATCOM lab												•				
Assessment SATCOM lab												•				

ASSESSMENT CRITERIA

General criteria

In English:

Evaluation will assess if students have acquired all the competences of the subject. Thus, evaluation activities that assess learning outcomes that cannot be evaluated through a single exam can be carried out along the semester in dates to be announced. Such activities cannot be carried out in other dates (laboratories and project).

Global examination will be carried out under the same conditions as the progressive evaluation. Therefore the mandatory activites will be carried out in the dates which will announced, but can be done again if they are completed but the minimal mark is not achieved, but in the case of the group project which cannot be recovered if not carried out within the established deadlines.

Evaluation criteria:

- Project evaluation will account 40% of the final mark (cannot be recovered if not done within the project deadlines)

- Laboratory evaluation 15% of the final mark (minimal mark in this part 4 / 10 in each laboratory). Carrying out the laboratories is mandatory for all student. Failing in obtaining the minical mark can be evaluated in the final exam on the laboratories to check if they have the same knowledge as students that passed the progressive evaluation.

- Exam, written (45%) - minimal mark 4/10, with a minimal threshold in the theory (3/10) and exercises (3/10). In the total weight of the exam, theory is 40% and 60% the exercises.

In this subject it is possible to keep the mark of project, laboratories or the exams (in global, the overall mark of the exams) until the extraordinary examination (referred / re-sit examination)

Assessment criteria for the regular exam period. Progressive assessment

Assessment criteria

Evaluation will assess if students have acquired all the competences of the subject. Thus, evaluation activities that assess learning outcomes that cannot be evaluated through a single exam can be carried out along the semester in dates to be announced. Such activities cannot be carried out in other dates (laboratories and project).

Global examination will be carried out under the same conditions as the progressive evaluation. Therefore the mandatory activites will be carried out in the dates which will announced, but can be done again if they are completed but the minimal mark is not achieved, but in the case of the group project which cannot be recovered if not carried out within the established deadlines.

Evaluation criteria:

- Project evaluation will account 40% of the final mark (cannot be recovered if not done within the project deadlines)

- Laboratory evaluation 15% of the final mark (minimal mark in this part 4 / 10 in each laboratory). Carrying out the laboratories is mandatory for all student. Failing in obtaining the minical mark can be evaluated in the final exam on the laboratories to check if they have the same knowledge as students that passed the progressive evaluation.

- Exam, written (45%) - minimal mark 4/10, with a minimal threshold in the theory (3/10) and exercises (3/10). In the total weight of the exam, theory is 40% and 60% the exercises.

Activities

- Entrega actividades de laboratorio / Laboratory deliverable (5%)
- Entrega actividades de laboratorio / Laboratory deliverable (5%)
- Presentación parcial y final del proyecto en clase. Y entrega memoria proyecto / Intermediate and Final project presentation and final report delivery (40%)

- Written exam: theory and exercises (45%)
- Assessment SATCOM lab (5%)

Assessment criteria for the regular exam period. Global assessment

Assessment criteria

Global examination will be carried out under the same conditions as the progressive evaluation. Therefore the mandatory activites will be carried out in the dates which will announced, but can be done again if they are completed but the minimal mark is not achieved, but in the case of the group project which cannot be recovered if not carried out within the established deadlines.

Evaluation criteria:

- Project evaluation will account 40% of the final mark (cannot be recovered if not done within the project deadlines)

- Laboratory evaluation 15% of the final mark (minimal mark in this part 4 / 10 in each laboratory). Carrying out the laboratories is mandatory for all student. Failing in obtaining the minical mark can be evaluated in the final exam on the laboratories to check if they have the same knowledge as students that passed the progressive evaluation.

- Exam, written (45%) - minimal mark 4/10, with a minimal threshold in the theory (3/10) and exercises (3/10). In the total weight of the exam, theory is 40% and 60% the exercises.

Activities

- Presentación parcial y final del proyecto en clase. Y entrega memoria proyecto / Intermediate and Final project presentation and final report delivery (40%)
- Examen escrito: teoría y ejercicios / Written exam: theory and exercises (45%)
- Examen de laboratorios si se han realizado / repeat laboratory exercise (cada uno puede evaluarse individualmente) (15%)

Assessment criteria for the retake (extraordinary) exam period

Assessment criteria

Same assessment as for the global examination

Activities

- Examen escrito: teoría y ejercicios / Written exam: theory and exercises (50%)
- Recuperación de laboratorios si se han realizado / repeat laboratory exercise (cada uno puede repetirse individualmente) (10%)
- Presentaciones intermedias y final del proyecto en clase (si se ha realizado en su tiempo). Y entrega memoria proyecto / Intermediate and final project presentation and final report delivery (40%)

RESOURCES

Equipment

Laboratorios

Laboratorios y equipos para las prácticas

Web

Revistas del IEEE relacionados con la materia (p.ej. IEEE Communications Magazine)

Bibliography

Estándares presentados en la asignatura

Varios tipos de estándares ETSI, ITU, IEEE, IETF, ISO

Satellite Communications, Fourth Edition (Professional Engineering). Dennis Roddy. 2006

Advanced Optical Communication Systems and Networks (Artech House Applied Photonics) 2013. Milorad Cvijetic and Ivan B. Djordjevic

An Introduction to LTE: LTE, LTE-Advanced, SAE, VoLTE and 4G Mobile Communication. Christopher Cox

Fiber-Optic Communication Systems (Fourth Edition); G. P. Agrawal,, Wiley Interscience, 2010.

Optical Fiber Communications Vol. VI-B, Systems and Networks, ed. I. Kaminow, T. Li, A. Willner , Academic, 2013.

SUSTAINABLE DEVELOPMENT GOALS

Quality Education

Gender Equality

Industry, Innovation and Infrastructure

OTHER INFORMATION

Esta asignatura realizará el trabajo conjunto con la asignatura del MUIT denominada "Redes de Comunicaciones". Debido al desarrollo y la organización, el temario correspondiente a la parte de sistemas satelitales podrá intercambiarse con el de "comunicaciones móviles e IoT", así como intercambiar fechas este laboratorio con el de la parte satelital.

Esta asignatura está alineada con los objetivos de desarrollo sostenible (ODS) en los siguientes objetivos:

4.4 De aquí a 2030, aumentar considerablemente el número de jóvenes y adultos que tienen las competencias necesarias, en particular técnicas y profesionales, para acceder al empleo, el trabajo decente y el emprendimiento

5.b Mejorar el uso de la tecnología instrumental, en particular la tecnología de la información y las comunicaciones, para promover el empoderamiento de las mujeres

9.5 Aumentar la investigación científica y mejorar la capacidad tecnológica de los sectores industriales de todos los países, en particular los países en desarrollo, entre otras cosas fomentando la innovación y aumentando considerablemente, de aquí a 2030, el número de personas que trabajan en investigación y desarrollo por millón de habitantes y los gastos de los sectores público y privado en investigación y desarrollo.

En la asignatura las actividades que se desarrollan ayudan a promover estos objetivos.