
Academic Year of Degree: 2025/26

23978 - Telematics Applications

Teaching Guide Information

Academic Course: 2025/26

Academic Center: 337 - Engineering School

Study: 3379 - Bachelor's degree in Telecommunications Network Engineering

Subject: 23978 - Telematics Applications

Credits: 5.0

Course: 3

Teaching languages:

Theory: Group 1: English, Spanish

Practice: Group 101: English, Spanish

Seminar: Group 101: English, Spanish

Group 102: English, Spanish

Teachers: David Llanos Santos, Davinia Hernandez Leo, Daniel Esono Ferrer

Teaching Period: Second term

Presentation

In this subject, it is intended that student know the principles and **technologies to program communications applications**. Students will apply these technologies in practice and, at the end of the subject they will be able to program simple distributed applications about TCP / IP networks.

Several subjects allow students to deepen some of the competences covered in this subject.

Associated skills | General learning outcomes

Basic competences:

CB1. That the students have proved to possess and understand knowledge in a study area which comes from the basis of general secondary education, and are usually in a level which, although it is supported on advances text books, it also includes some aspects which imply knowledge coming from their study field's innovation;

CB2. That the students can apply their knowledge to their work or vocation of a professional form and possess the competences which are usually proved by means of the elaboration and defense of arguments and solving of problems within their study area;

CB3. That the students have the ability of collecting and interpreting relevant data (normally within their study area) to issue judgements which include a reflection about relevant topics of social, scientific or ethical nature;

CB4. That the students can transmit information, ideas, problems and solutions to a public both specialized and non specialized;

CB5. That the students have developed those learning abilities necessary to undertake later studies with a high degree of autonomy.

Transversal competences:

CT1. Working in group in international and interdisciplinary contexts.

CT3. Applying with flexibility and creativity the acquired knowledge and adapting it to new contexts and situations.

CT4. Communicating in academic and professional contexts orally and writing in English.

UPF3. Global citizen competences

UPF4. Gender competence

Specific competences:

CE12. Programming distributed computing applications which use the services and functionalities of transference of data provided by the communications networks.

Learning outcomes | Specific learning outcomes

Associated to CE12:

RA.CE12.1 Recognizing the concepts of the paradigm of programming oriented towards objects and applying them in the designing of programs.

RA.CE12.3 Designing and implementing applications based on services offered by the operative systems.

RA.CE12.4 Integrating applications of which the elements are distributed and connected by means of communications networks.

Contents

Distributed systems: basic concepts and non-functional requirements. Distributed systems models

Networking and Interprocess communication

Object Oriented Middleware. Remote Invocation. Distributed applications with Java, Multi-language distributed applications: Common Object Request Broker Architecture.

Component oriented Middleware, Servlets

Services oriented Middleware. Web Services, SOAP, REST

Advanced aspects of telematic applications: P2P, Cloud Computing, DNS, Indirect Communication

Sustainable Development Goals

4 - Quality Education

5 - Gender Equality

Evaluation and grading system

To pass successfully this subject, it is necessary to fulfil what is detailed in the table below.

Evaluation elements	Evaluation Procedure	The minimum mark to pass the subject	Percentage in the final mark of the subject
Activities in seminars and lectures	Task to solve before, during and after the seminar and lecture sessions.	All the activities proposed for seminars must be completed. (No recoverable)	30%
Project	One practical project (with two demos/assignments) to be completed in dyads.	Minimum of 5 points out of 10 (No recoverable)	30%
Aggregated written test	It is at the end of the term. It covers all the subject matter (theory, validating practical activities and seminars).	Minimum of 5 points out of 10 (Recoverable in July)	40%

To pass the subject, it is required to obtain at least 5 points (out of 10) as a final mark.