

ICT and Internet Engineering A.A 2024/2025

The Master's Degree Course in ICT and Internet Engineering is composed of didactic units and formative activities for a total amount of 120 University Educational Credit (CFU).

The Course of Study covers four kinds of subjects and formative activities:

- Mandatory subjects and formative activities (54 CFU);
- Optional subjects within formative paths (54 CFU);
- Optional subjects freely chosen by students (12 CFU);
- Supplementary subjects (these subjects are reserved to those students who need to complete their Bachelor's Degree Course background)

Mandatory subjects

The following subjects have to be included into the Study Plan:

MANDATORY SUBJECTS AND FORMATIVE ACTIVITIES	YEAR	SEMESTER	CREDITS
Digital Communications	1	1	6
Internet Technology and Protocols	1	1	9
Mobile Wireless Networks	1	2	9
Radar and Localization	1	2	9
Formative Activities			3
Final Thesis			18

Optional subjects within formative paths

Students can choose seven subjects for a total amount of 54 CFU among the subjects of the formative paths, *including the first three subjects*. In any case, students can create their personal Study Plan choosing the subjects from different formative paths. Personal Study Plans must be approved by the Course of Study Board and it is subject to being coherent with the didactic structure (Ordinamento Didattico) and with the whole formative path of ICT and Internet Engineering.

Formative Paths

Cybersecurity	YEAR	SEMESTER	CREDITS
Network Security	1/2	1	6/9
Network and System Defence	2	1	6/9
Cloud Computing and Networking	2	1	6
Wireless Electromagnetic Technologies	1	1	9
Sistemi Operativi Avanzati (^)	2	1	9
Hardware, Electromagnetic and Localization Security	2	1	6
Internet of Things: Principles and Applications	1/2	2	6
Information Theory and Data Science	2	1	6/9
Analisi del Malware (+)	1/2	1	6

Internet of Things and Cloud	YEAR	SEMESTER	CREDITS
Cloud Computing and Networking	2	1	6
Internet of Things: Principles and Applications	1/2	2	6
Information Theory and Data Science	2	1	6/9
Network Infrastructures	1	2	6/9
Network Security	1/2	1	6/9
Network and Systems Defence	2	1	6/9
Internet via Satellite	2	1	6
Software Networks	2	2	6
Deep Learning	2	2	6/9
Model-based Systems Engineering	1	1	6
Space Integrated Systems	YEAR	SEMESTER	CREDITS
Satellite Earth Observation	1/2	1	6/9
Satellite Navigation and Surveillance Systems	2	1	6/9
Internet via Satellite	2	1	6
Wireless Electromagnetic Technologies	1	1	9
Network Security	1/2	1	6/9
Radar Systems and Applications	2	2	6
Multimedia Processing and Communications	2	1	6
Information Theory and Data Science	2	1	6/9
Sensing Systems	YEAR	SEMESTER	CREDITS
Wireless Electromagnetic Technologies	1	1	9
Remote Sensing and Cartography	2	2	6
Satellite Earth Observation	1/2	1	9
Radar Systems and Applications	2	2	6
Satellite Navigation and Surveillance Systems	2	1	9
Information Theory and Data Science	2	1	9
Microwaves	2	2	6
Sistemi Wearable e Telemetria Medica (^)	2	2	6
Connectivity Infrastructures	YEAR	SEMESTER	CREDITS
Multimedia Processing and Communication	2	1	6
Network Infrastructures	1	2	9
Optical Communications	2	1	6
Wireless Electromagnetic Technologies	1	1	9
Internet via Satellite	2	1	6
Network Security	1/2	1	9
Information Theory and Data Science	2	1	9
Internet of Things: Principles and Applications	1/2	2	6

Optional subjects freely chosen by students.

To complete the Study Plan, students have to choose up to 12 CFU among the subjects which are shown in the above formative paths. A possible option is to choose other subjects from other Courses of Study of the University. The approval of this choice is subject to the assessment of its coherence with the whole formative path of ICT and internet Engineering.

Please note: 9 CFU subjects can be also taught in the 6 CFU reduced version. In this case, students can attend the 2/3 of the 9 CFU programme and the final examination is only about the relevant part. Some subjects can be attended both in the first and in the second year of the Master's Degree Course without impacting the whole formative path. Further details will be given by the Professors.

Supplementary subjects.

These subjects cannot be chosen autonomously, but they are reserved to those students who need to complete their Bachelor's Degree Course background. In most cases, by assessing the students background after their enrolment, the Course of Study Board can decide to put one or more supplementary subjects into their Study Plan as mandatory subjects. Students can also decide to choose these subjects autonomously when their background lacks that knowledge. In this case, these CFU are a part of the required 120 credits and no additional credits are requested.

SUBJECTS	YEAR	SEMESTER	CREDITS
Electromagnetic Fields	1	1	6
Fundamentals of Telecommunications	1	2	6
Networking and Internet	1	2	6/9
Digital Signal Processing	1	2	6

Required background.

The Master's Degree Course in ICT and Internet Engineering required the basic knowledge of Maths and Physics, as all the other Courses of Study on the Engineering School. As for the field of the Computer Science Engineering, some basic knowledge of Electronics, Automatic Controls, Computer Science, Networks and Signals are requested. For a background different from the Bachelor's Degree in Ingegneria di Internet, some subjects are suggested to fill the gaps. The Bachelor's Degree Courses of Study in the field of Computer Science Engineering, Electronics Engineering and Telecommunications Engineering are completely compatible with the Master's Degree Courses of Study in ICT and Internet Engineering.