

Liste d'éléments pédagogiques

Practical info

Location(s)

 Toulouse

Advanced interconnection and long distance networks



ECTS
7 crédits



Hourly volume
103h

Introducing

Objectives

At the end of this module, the student will have understood and be able to explain the:

- network architectures and protocols used in operator networks. More precisely, those related to Quality of Service, IPv6, SNMP, inter-domain & intra-domain routing, MPLS and traffic engineering
- wide area data network services that are in use in business, namely VPN (Virtual Private Network) services (Layer 2 and IP) and Carrier Ethernet services
- basics of network optimization, network planning and traffic engineering as well as the accompanying models and algorithms
- main concepts and formalisms used for the description and verification of communication protocols.

The student will be able to:

- Apprehend and master the functioning of Internet core networks (that may conform to the DiffServ framework, with IPv6 and/or MPLS enabled portions, etc.) and manage them
- Design and deploy VPN services for business
- Manage network devices via SNMP
- Apply the appropriate algorithms to network planning and network optimization problems
- Apply formal modelling and verification techniques to communication protocols

Practical info

Location(s)

 Toulouse

Architecture of telecommunication systems



ECTS
3 crédits



Hourly volume
41h

 Toulouse

Introducing

Objectives

At the end of this module, the student will have understood and be able to explain (main concepts):

- the particularities of different types of networks (optical, wireless, spatial networks) and their transmission channel.
- The specification, dimensioning, implementing and/or deployment process of equipments of telecommunication systems in order to optimize parameters such as quality of service, throughput, coverage.

Necessary prerequisites

I3MITC21 - Signals and telecommunications
I4RTC11 - Transmission Systems and Techniques

Practical info

Location(s)

Concurrent and real time system



ECTS
4 crédits



Hourly volume
53h

Introducing

Objectives

This module deals with specification, modelling and realisation of parallel, communicating and synchronised systems under time constraints

Necessary prerequisites

MSC: graph theory, Propositional calculus
PTR: language C

Practical info

Location(s)

 Toulouse

Research Initiating Project



ECTS
4 crédits



Hourly volume
37h

Introducing

Objectives

The module aims at motivating students with research activities through a selection of tutored projects. Each project involve a team off 6 students tutored by a researcher or an industrial partner. Those projects also benefit from a preliminary training on documentary research techniques to facilit the writing of a state-of-theart review of the domain. A course to project management techniques is also provided to guide students during the realisation phase of the project.

At the end of this module, the student wil have a practical experience of the following activities :

- identify a bibliography on a given topic, and present it through a standard formulation (IEEE form).
- write a state-of-the-art synthesis.
- precise the perimeter of the realization phase.
- apply project management and collaborative work techniques.
- write a project report and prepare a presentation in english for its project defense.

Practical info

Location(s)

 Toulouse

[FRANCAIS] Machine Learning



ECTS
2 crédits



Hourly volume

Introducing

Objectives

The objection of this course is to introduce the basic notions of machine learning and in particular the case of supervised learning.

Necessary prerequisites

Linear Algebra, Algorithms and complexity

Practical info

Location(s)

 Toulouse

French II



ECTS
3 crédits



Hourly volume

Practical info

Location(s)



Toulouse

Communication in organisations with LV2



ECTS

6 crédits



Hourly volume

Introducing

Objectives

Objectives:

At the end of this module, the student will have understood and be able to explain (main concepts):

- How to answer the demand of the civil society for technical and scientific information
- How to carry out critical analysis in order to give appropriate answers when questioned about such issues
- How to consider the circulation and content of information within the organizations in which they will be hired

The classes given in English will focus on the specific linguistic characteristics of the English used in scientific contexts in order for the students to understand and master them.

The students will also be made aware of the specificities of scientific English as relates to publications in his specific field of research.

Module L 2

The objectives, defined in reference to the CEFR for the 5 language activities, are specific for the language studied (Chinese, German, Spanish) and the level of the student.

They can be consulted on :

<https://moodle.insa-toulouse.fr/course/view.php?id=44>

In certain cases, students may be authorised to follow an English module instead of another language

Necessary prerequisites

Necessary knowledge:

For classes in English : understanding of scientific English

Practical info

Location(s)



Toulouse

Communication in organisations



ECTS
6 crédits



Hourly volume
42h

Practical info

Location(s)



Toulouse

QSE , APS 2



ECTS
4 crédits



Hourly volume
38h

Practical info

Location(s)



Toulouse

Political sciences semestre 2



ECTS
3 crédits



Hourly volume

Practical info

Location(s)



Toulouse